Soil Survey of

Jackson County, Florida

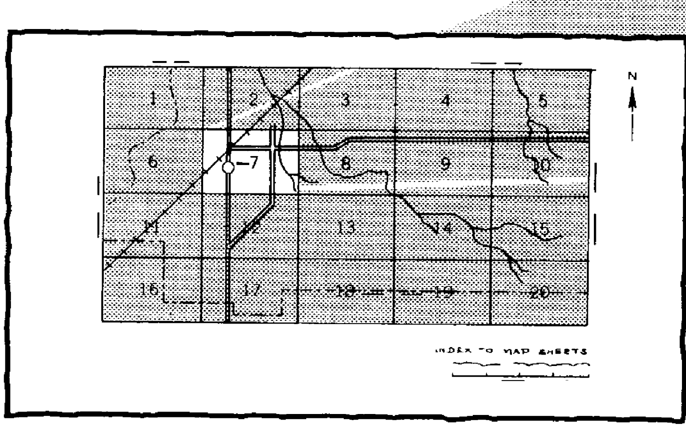
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

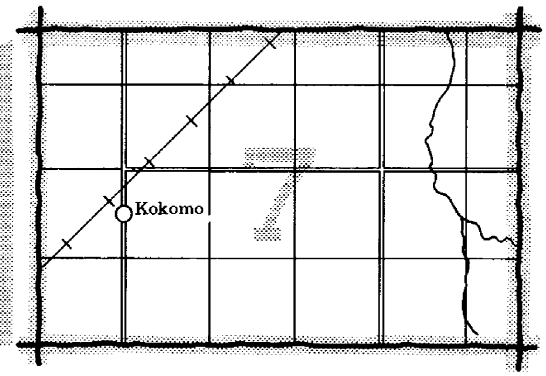
IN COOPERATION WITH

UNIVERSITY OF FLORIDA
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
AND AGRICULTURAL EXPERIMENT STATIONS
SOIL SCIENCE DEPARTMENT

HOW TO USE

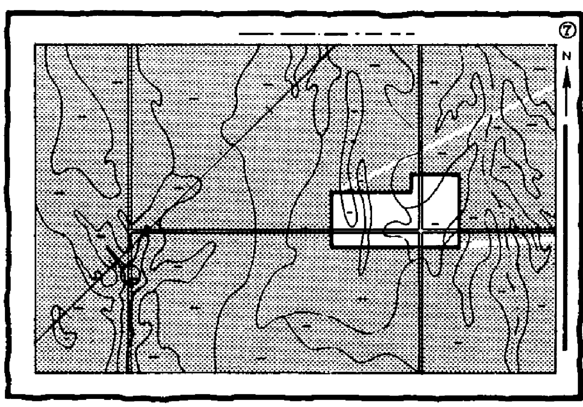
1. Locate your area of interest on the "Index to Map Sheets" (the last page of this publication).

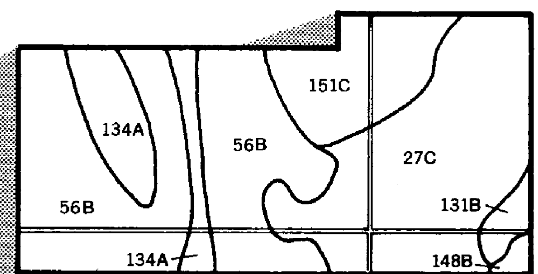




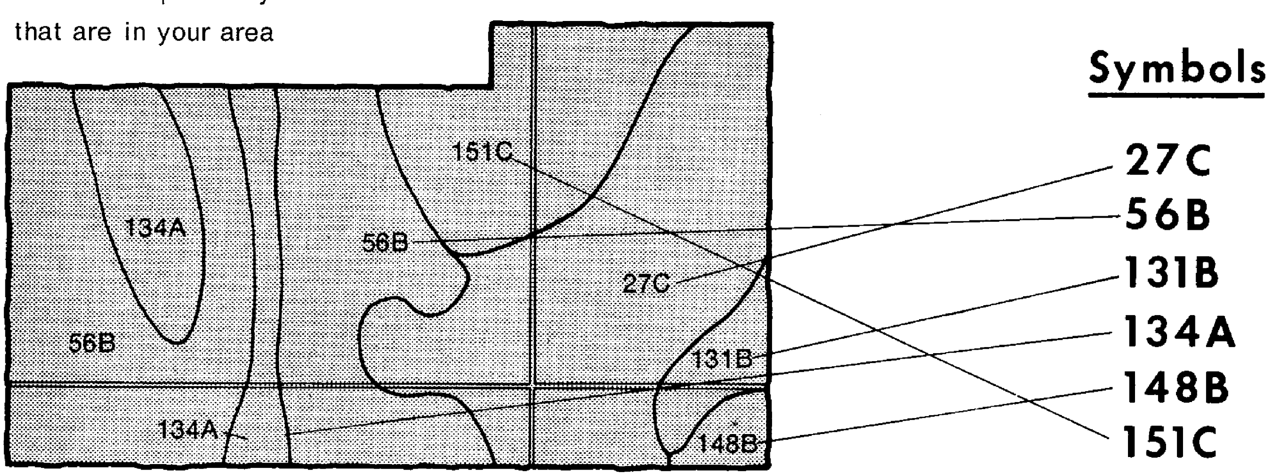
2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.



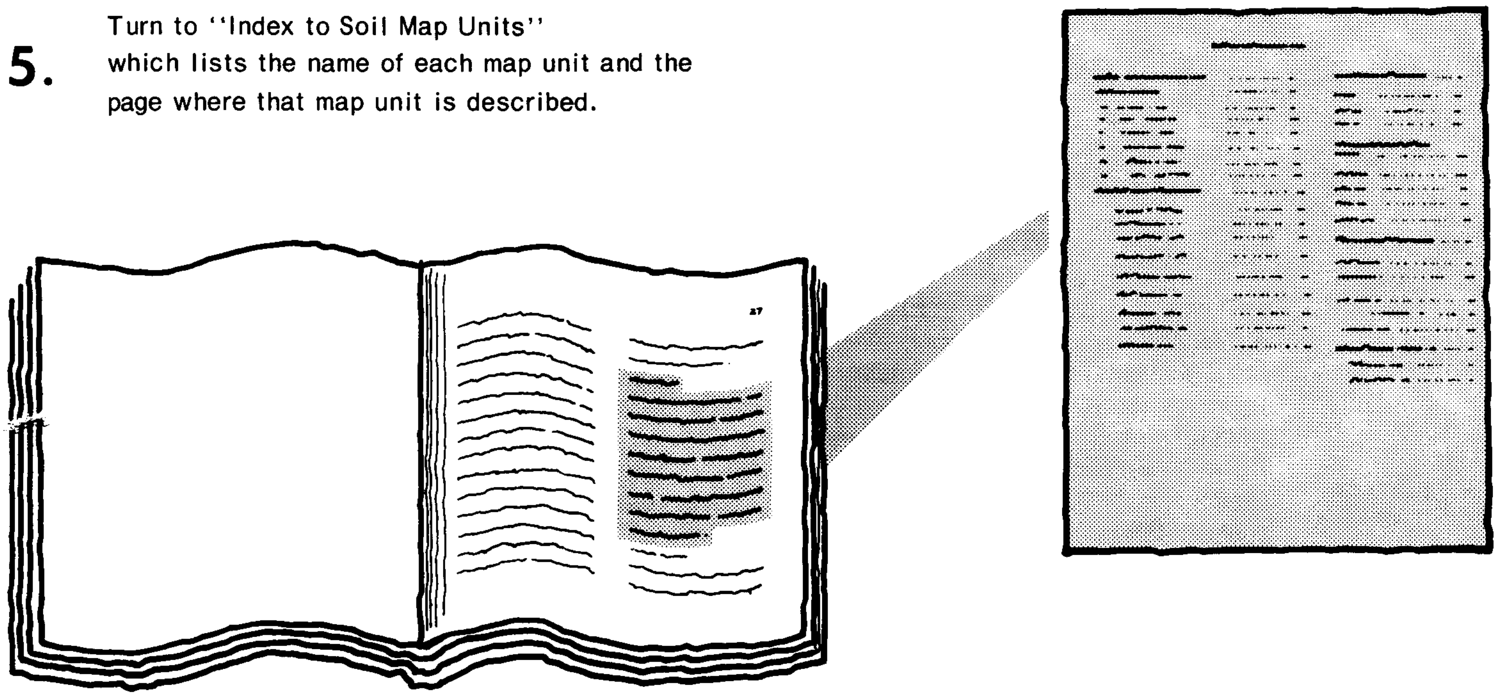


4. List the map unit symbols that are in your area

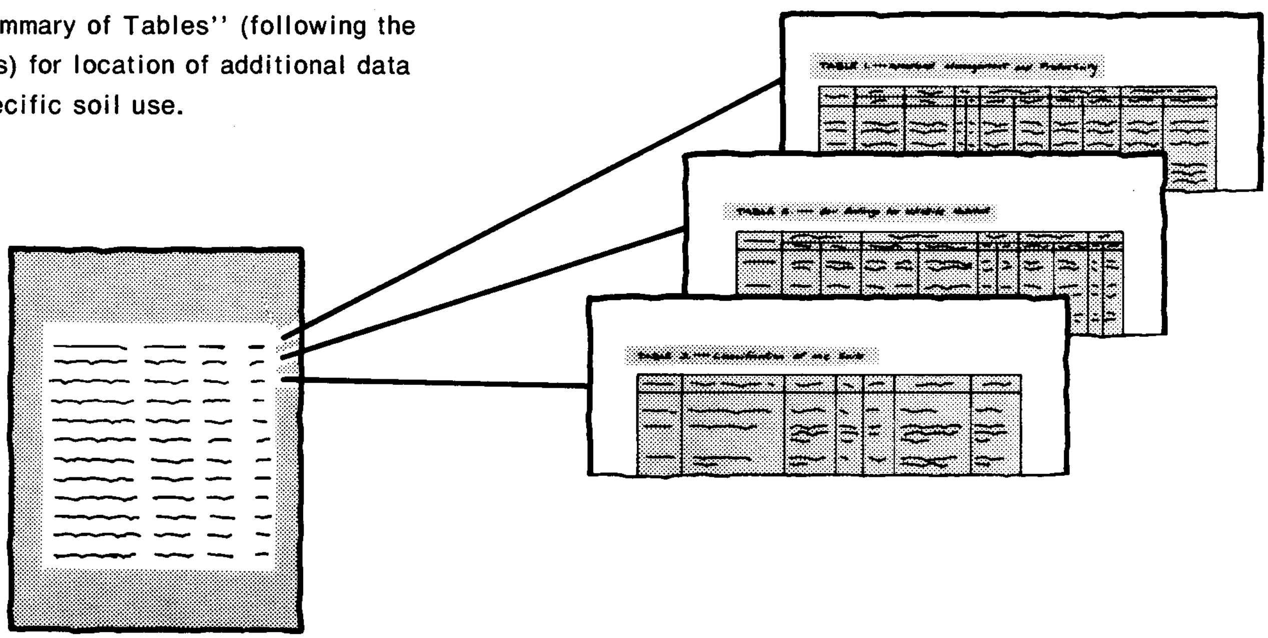


THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; for specialists in wildlife management, waste disposal, or pollution control.

This is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and agencies of the States, usually the Agricultural Experiment Stations. In some surveys, other Federal and local agencies also contribute. The Soil Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in the period 1970-1977. Soil names and descriptions were approved in 1977. Unless otherwise indicated, statements in the publication refer to conditions in the survey area in 1977. This survey was made cooperatively by the Soil Conservation Service and the University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations, Soil Science Department. It is part of the technical assistance furnished to the Chipola River Soil and Water Conservation District.

Soil maps in this survey may be copied without permission, but any enlargement of these maps can cause misunderstanding of the detail of mapping and result in erroneous interpretations. Enlarged maps do not show small areas of contrasting soils that could have been shown at a larger mapping scale.

Cover: The Chipola River flows southward across the central part of Jackson County. Yonges and Herod soils are the most common soils along the banks.

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Issued July 1979

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Foreword

The Soil Survey of Jackson County, Florida contains much information useful in any land-planning program. Of prime importance are the predictions of soil behavior for selected land uses. Also highlighted are limitations or hazards to land uses that are inherent in the soil, improvements needed to overcome these limitations, and the impact that selected land uses will have on the environment.

This soil survey has been prepared for many different users. Farmers, ranchers, foresters, and agronomists can use it to determine the potential of the soil and the management practices required for food and fiber production. Planners, community officials, engineers, developers, builders, and homebuyers can use it to plan land use, select sites for construction, develop soil resources, or identify any special practices that may be needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the soil survey to help them understand, protect, and enhance the environment.

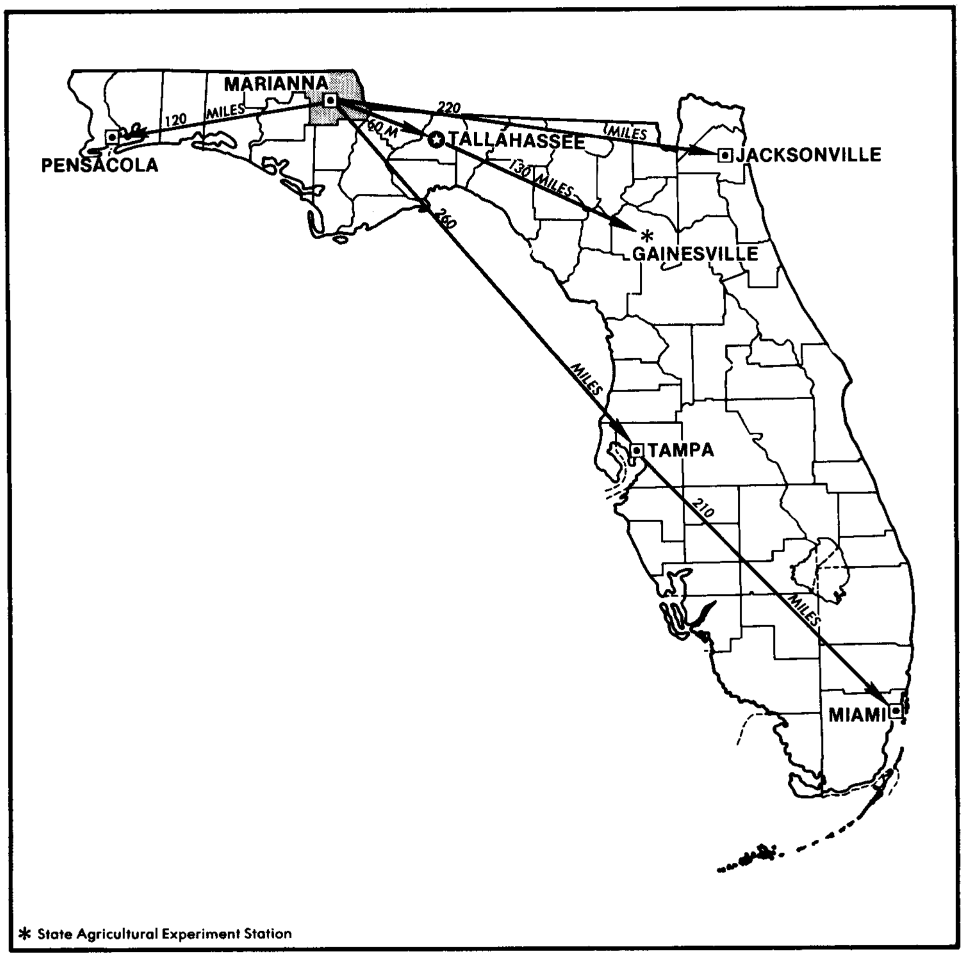
Great differences in soil properties can occur even within short distances. Soils may be seasonally wet or subject to flooding. They may be shallow to bedrock. They may be too unstable to be used as a foundation for buildings or roads. Very clayey or wet soils are poorly suited to septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map; the location of each kind of soil is shown on detailed soil maps. Each kind of soil in the survey area is described, and much information is given about each soil for specific uses. Additional information or assistance in using this publication can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

This soil survey can be useful in the conservation, development, and productive use of soil, water, and other resources.

William E. Austin

William E. Austin
State Conservationist
Soil Conservation Service



Location of Jackson County in Florida.

soil survey of jackson county, florida

United States Department of Agriculture
Soil Conservation Service
in cooperation with

University of Florida, Institute of Food and Agricultural Sciences and
Agricultural Experiment Stations, Soil Science Department

By Ernest M. Duffee, William J. Allen,
and Harold C. Ammons, Soil Conservation Service

Also participating in the field survey was
Herbert H. Weeks, Soil Conservation Service

JACKSON COUNTY, part of the Florida panhandle (see facing page), is bordered on the north by Geneva and Houston Counties, Alabama; on the east by Seminole County, Georgia, and Gadsden County, Florida; on the south by Calhoun and Bay Counties; and on the west by Washington and Holmes Counties. Holmes Creek forms the boundary between Jackson and Holmes Counties. The Chattahoochee River, the Jim Woodruff Reservoir, and the Apalachicola River form the boundary between Jackson County and Gadsden and Seminole Counties.

General nature of the county

The county covers 596,680 acres, or 932 square miles. It is about 40 miles wide at the widest part and 30 miles long at the longest part. The population is about 40,000. Marianna, the largest town and county seat, has a population of 7,770.

Farming is the largest single enterprise. Forest products and livestock production are also important to the economy of the county. There are a few small nonfarm industries.

The following paragraphs describe the environmental and cultural factors that affect the use and management of soils in Jackson County.

Climate

Jackson County has a moderate climate. Summers are long, warm, and humid. Winters are mild to cool. The Gulf of Mexico moderates maximum and minimum temperatures.

Annual rainfall in the county averages 58 inches. About 60 percent of the total occurs during the 5-month rainy season, which generally begins early in December and ends late in April. Less than 10 percent of the total falls in May and June. About 30 percent falls in July and August. October and November are generally the driest months.

Because the air is moist and unstable, showers are frequent and generally short. In summer, thunderstorms occur on an average of 1 to 3 days each week. Sometimes 2 or 3 inches of rain falls within 1 or 2 hours. Rain lasting all day is rare in summer. Winter and spring rains generally are not so intense as the summer thundershowers. One year in 10, more than 8 inches of rain falls in a 24-hour period. Occasionally, heavy rain and high wind accompany the passage of a tropical disturbance or hurricane. Hail falls occasionally during a thunderstorm, but it is generally small and seldom causes much damage. Snow is extremely rare.

As cold continental air flows eastward across the Florida panhandle toward Jackson County, the cold is appreciably modified. The coldest weather is generally the

second night after the arrival of the cold front, after heat is lost through radiation. The average date of the first killing frost is about November 15th. The average date of the last killing frost is about March 15th. Frost has occurred however, as early as November 1st and as late as April 15th. Freeze data representative of the county (*9*) are shown in table 2.

Summer temperatures are moderated by the Gulf breeze and by cumulus clouds, which frequently shade the land without completely obscuring the sun. Mean average temperature in June, July, August, and September is about 80 degrees F. Temperatures of 86 degrees or higher have occurred in May, June, July, August, and September, but 100 degrees is reached only rarely. In July and August, the warmest months, the average maximum temperature is 90 degrees. Temperatures above 95 degrees occur on fewer than 6 days. Temperature and precipitation data (*8*) are shown in table 1.

Fog occurs on an average of 5 mornings a month in winter and spring and almost never in summer and fall. Prevailing winds are generally from the south. In November, December, and January they are from the northwest. The mean windspeed for the year is 7.5 miles per hour. The lowest monthly mean windspeed, 5.8 miles per hour, occurs in August. The highest, 9.0 miles per hour, occurs in March.

Physiography, relief, and drainage

Jackson County lies within the Coastal Plain province (*4*). Three predominant topographic levels subdivide the county into three physiographic regions—the Marianna River Valley Lowlands, the Delta Plain Highlands, and the Terraced Coastal Lowlands.

The Marianna River Valley Lowlands, the largest physiographic unit in Jackson County, includes all but the extreme southwestern part of the county and a smaller area east of the Chipola River near the Calhoun County line. This terraced lowland formed through the erosion and deposition by streams, namely the Chattahoochee and Apalachicola Rivers, the Chipola River, Dry Creek, and Holmes Creek. Elevation ranges from about 60 feet to 180 feet above sea level. The soils are dominantly well drained to somewhat poorly drained, but some in low swamps and on flood plains are poorly drained or very poorly drained. Most of the soils have a sandy surface layer and a loamy subsoil. The natural vegetation is dominantly mixed pine and hardwood forest. Much of this region has been cleared and is used for crops and pasture.

The Delta Plain Highlands, in the southwestern part of the county south of Dry Creek and north of Compass Lake, extends eastward to near Florida Highway 73. Elevation generally is more than 240 feet and ranges to about 320 feet. The soils are dominantly excessively drained and sandy. The natural vegetation is mostly turkey oak, post oak, bluejack oak, and scattered longleaf pine. This region is mostly in natural vegetation.

The Terraced Coastal Lowlands is dominantly south of the Delta Plain Highlands, but probably includes an extensive high flat area east of the Chipola River, southeast of Alliance, in Calhoun County. Elevation ranges from about 180 to 240 feet. The soils are dominantly excessively drained and sandy in the southwestern area and are well drained with a loamy subsoil in the eastern area. The natural vegetation on the excessively drained soils is mostly turkey oak, post oak, bluejack oak, and scattered pine. On the well drained soils, it is mixed pine and hardwood. Much of this region has been cleared and is used for crops and pasture.

Most of the central and western part of Jackson County is drained through a well developed surface drainage system. The northeastern part is drained through numerous sinks and depressions. The Chattahoochee and Apalachicola Rivers to the east, the Chipola River in the central part, and Holmes Creek to the west are the principal surface drains in the county. Dry Creek, Marshall Creek, Cowarts Creek, and other large creeks flow into these rivers.

Natural resources

Soil and water are the main resources in Jackson County. More than half the acreage is productive farmland. The climate is favorable for farming, and the growing season is long.

Water is the second most important natural resource. The Chipola, Apalachicola, and Chattahoochee Rivers and their tributaries and the many ponds and lakes provide recreation and support industrial activity.

Woodland also is a major resource. Forestry and forest products are important to the county's economy. Although most native trees have been harvested, landowners are following a program of reforestation in most areas.

A limestone formation underlies a large part of Jackson County. In several areas it is close to the surface and is mined for agricultural lime.

History and development

Jackson County, the third county in the Florida Territory, was established August 12, 1822. It was named for General Andrew Jackson.

Early settlement began before the county was established. In July, 1821, about 55 pioneer families were living in the area. By August 12, 1822, the number had increased to more than 150. According to a census in 1825, the population was 2,236. By 1830, it had increased to 3,910.

Jackson County includes four river valleys—the lower Chattahoochee River, the upper Apalachicola River, Holmes Creek, and the Chipola River, which roughly

divides the county in half. The first settlements were along the Chipola and Chattahoochee Rivers and Holmes Creek and near the Big Spring of Chipola, now called Blue Springs. The Chipola settlement, the largest, is now Marianna.

The first settlers cleared the heavily forested hammocks, which were thought to be the richest land. They cultivated small acreages of corn, cotton, and sugar cane and home gardens. On the fertile Chipola River bottomland, early planters raised premium cotton, corn, and sugar cane. The cotton was shipped down the Chipola and Apalachicola Rivers on barges and then taken by steamboats to Pensacola, Florida, or Mobile, Alabama. In 1913, cotton production totaled about 23,000 bales. After the boll weevil infestation that began in 1915, cotton production declined. Today almost no cotton is produced.

Farming

About 200,000 acres, or 33 percent of the county, is cropland. About 37,000 acres, or 6 percent, is improved pasture. Federally owned noncropped land, urban land, small water areas, and other land make up 37,500 acres, or 6 percent. The remaining 322,000 acres, or 55 percent of the county, is forest.

Soon after the territory was opened to settlers, several large plantations were developed. Cotton was the principal crop, and corn for livestock feed was second. The boll weevil was a major pest from 1915 to 1925, and as a result, cotton declined in importance. As the acreage in cotton decreased, peanut production increased. Peanuts and forest products are now the most important crops in the county.

The Holmes Creek Soil and Water Conservation District, which includes the northwestern part of Jackson County, was organized in 1937. It was the first soil conservation district in Florida. The rest of the county is in the Chipola River Soil and Water Conservation District, which was organized in 1940.

The soil, the climate, and the economy of Jackson County are favorable for agriculture. Present land-use patterns will probably continue. As the demand for food crops increases, it is likely that the acreage in crops will increase.

Recreation

Many types of recreation are available in Jackson County. Boating, water skiing, and various kinds of fishing are popular on most of the larger lakes and streams. The Chipola River provides canoeing, boating, fishing, and scuba diving for fossils and Indian artifacts. Each year several bass clubs hold fishing tournaments on Lake Seminole. Ocheesee Pond offers year-round fishing. The Florida Caverns State Park (fig. 1) has facilities for camping, picnicking, hiking, golfing, swimming, and other recreational activities.

The county is a popular hunting spot. Dove, quail, deer, rabbit, squirrel, and turkey hunting are most common. Nature trails and places for hiking and camping occur throughout the county. Several Indian mounds attract amateur and professional archeologists. Many people hunt and collect arrowheads in the county.

Transportation

There are many hard surfaced roads, highways, and bus routes in Jackson County. The airport at Marianna is used by military and private planes. Rail freight service is available in the county, and County, State, and Federal highways provide ready access to population centers in the county and in the State.

How this survey was made

Soil scientists made this survey to learn what kinds of soil are in the survey area, where they are, and how they can be used. The soil scientists went into the area knowing they likely would locate many soils they already knew something about and perhaps identify some they had never seen before. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the kinds of native plants or crops; the kinds of rock; and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material, which has been changed very little by leaching or by the action of plant roots.

The soil scientists recorded the characteristics of the profiles they studied, and they compared those profiles with others in counties nearby and in places more distant. Thus, through correlation, they classified and named the soils according to nationwide, uniform procedures.

After a guide for classifying and naming the soils was worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, roads, and other details that help in drawing boundaries accurately. The soil map at the back of this publication was prepared from aerial photographs.

The areas shown on a soil map are called soil map units. Some map units are made up of one kind of soil, others are made up of two or more kinds of soil, and a few have little or no soil material at all. Map units are discussed in the sections "General soil map for broad land use planning" and "Soil maps for detailed planning."

While a soil survey is in progress, samples of soils are taken as needed for laboratory measurements and for

engineering tests. The soils are field tested, and interpretations of their behavior are modified as necessary during the course of the survey. New interpretations are added to meet local needs, mainly through field observations of different kinds of soil in different uses under different levels of management. Also, data are assembled from other sources, such as test results, records, field experience, and information available from state and local specialists. For example, data on crop yields under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so that it is readily available to different groups of users, among them farmers, managers of rangeland and woodland, engineers, planners, developers and builders, homebuyers, and those seeking recreation.

General soil map for broad land use planning

The general soil map at the back of this publication shows, in color, map units that have a distinct pattern of soils and of relief and drainage. Each map unit is a unique natural landscape. Typically, a map unit consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one unit can occur in other units but in a different pattern.

The general soil map provides a broad perspective of the soils and landscapes in the survey area. It provides a basis for comparing the potential of large areas for general kinds of land use. Areas that are, for the most part, suited to certain kinds of farming or to other land uses can be identified on the map. Likewise, areas of soils having properties that are distinctly unfavorable for certain land uses can be located.

Because of its small scale, the map does not show the kind of soil at a specific site. Thus, it is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The kinds of soil in any one map unit differ from place to place in slope, depth, stoniness, drainage, or other characteristics that affect their management.

The soils in the survey area vary widely in their potential for major land uses. Table 3 shows the extent of the map units shown on the general soil map and gives general ratings of the potential of each, in relation to the other map units, for major land uses. Soil properties that pose limitations to the use are indicated. The ratings of soil potential are based on the assumption that practices in common use in the survey area are being used to overcome soil limitations. These ratings reflect the ease of overcoming the soil limitations and the probability of soil problems persisting after such practices are used.

Each map unit is rated for *community developments, cultivated farm crops, improved pastures,* and *woodland.* Community developments include residential, commercial, and industrial uses. Cultivated farm crops and improved pastures are those grown extensively by farmers in the survey area. Woodland refers to land that is producing either trees native to the area or introduced species.

Soils of the sand ridges

The two map units in this group are excessively drained to moderately well drained, nearly level to steep soils on uplands. Some are sandy throughout. Some are sandy to a depth of 40 to 80 inches and loamy below. These soils are in the southwestern and northeastern parts of the county.

1. Lakeland-Troup-Blanton

Nearly level to steep, excessively drained to moderately well drained soils, some sandy to a depth of 80 inches or more, some sandy to 40 to 80 inches and loamy below

This map unit is on uplands. It occurs as one area about 14 miles wide and 2 to 6 miles long in the extreme southwest corner of the county. The area is interspersed with large to small, steep-sided sinks, many of which are lakes or ponds. It includes Compass Lake, the community of Compass Lake, and Seventeen Mile Pond.

The landscape is mainly one of nearly level to gently sloping broad ridges and steep slopes around sinks and along drainageways. There is a well established stream pattern of creeks and branches and narrow wet bottomland. The natural vegetation is mostly turkey, post, bluejack, and blackjack oak and scattered longleaf pine. In some areas, longleaf and slash pine is the dominant vegetation.

This unit makes up about 50,000 acres, or 9 percent of the county. It is about 40 percent Lakeland soils, 30 percent Troup soils, 15 percent Blanton soils, and 15 percent soils of minor extent.

Lakeland soils are excessively drained. Typically, they have a surface layer of dark brown sand about 5 inches thick. Below this is yellowish brown and very pale brown sand that extends to 82 inches or more.

Troup soils are well drained. They have a surface layer of light yellowish brown sand. The subsurface layer, extending to a depth of 57 inches, is brownish yellow, pale brown, and reddish yellow sand. The subsoil is yellowish red sandy loam.

Blanton soils are moderately well drained. The surface layer is brown coarse sand. The subsurface layer, extending to a depth of 63 inches, is yellowish brown to

very pale brown coarse sand. The subsoil is yellowish brown sandy loam mottled with yellow, gray, and red.

Minor in this unit are Bonifay, Albany, Leefield, Chipola, Fuquay, Dothan, Esto, Faceville, and Orangeburg soils.

Large areas of this unit were cleared and planted to tung nut trees, but most have been converted to pasture. Some are under urban development. The rest of the unit is wooded. Almost all merchantable timber has been removed, and the plant cover is scrub oak. Some areas have been replanted to slash pine and sand pine.

2. Blanton-Troup-Bonifay

Nearly level to strongly sloping, well drained and moderately well drained soils, sandy to a depth of more than 40 inches and loamy below

This map unit is on uplands. It occurs as one large area in the northeastern part of the county and a few scattered small areas in the eastern and southern parts. Individual areas range from about 2 to almost 70 square miles. The unit is interspersed with numerous sinks and shallow depressions. It includes the communities of Bascom and Two Egg.

The landscape is one of broad, nearly level to gently sloping ridges and short, strong slopes around the numerous sinks or potholes. In the northeastern part of the county, the depressions are generally saucerlike and have gently sloping sides. Many of these depressions, however, are lakes and intermittent ponds. Drainage is mostly subterraneous, but there are a few poorly defined drainageways. Lake and intermittent pond levels fluctuate considerably from season to season, depending on rainfall and seepage from the surrounding deep sandy soils.

The natural vegetation is slash and longleaf pine, live oak, post oak, red oak, dogwood, and an understory of native grasses and shrubs.

This map unit makes up about 61,000 acres, or 10 percent of the county. It is about 45 percent Blanton soils, 30 percent Troup soils, 15 percent Bonifay soils, and 10 percent soils of minor extent.

Blanton soils are moderately well drained. They have a surface layer of brown coarse sand. The subsurface layer, extending to a depth of about 63 inches, is yellowish brown to very pale brown coarse sand. The subsoil is yellowish brown sandy loam mottled with yellow, gray, and red.

Troup soils are well drained. They have a surface layer of light yellowish brown sand. The subsurface, extending to a depth of 57 inches, is brownish yellow, pale brown, and reddish yellow sand. The subsoil is yellowish red sandy loam.

Bonifay soils are well drained. They have a surface layer of dark grayish brown sand. The subsurface layer, extending to a depth of about 45 inches, is yellowish brown, light yellowish brown, and brownish yellow sand and loamy sand. The subsoil is light yellowish brown, yellowish brown, and brownish yellow sandy loam and sandy clay loam. It is mottled with yellow, brown, red, and gray.

Minor in this unit are Chipola, Fuquay, Orangeburg, Red Bay, Dothan, Esto, Wicksburg, Faceville, Hornsville, Albany, and Plummer soils.

Most areas are cutover woodland, cropland, or bahiagrass improved pasture.

Soils of the uplands

The four map units in this group are well drained to somewhat poorly drained, nearly level to strongly sloping soils on uplands. Some are loamy or clayey within a depth of 20 inches. Some are loamy between depths of 20 and 40 inches. Others are sandy to 40 to 80 inches, are loamy below, and have a loamy subsoil. These soils occur in all but the extreme southwestern part of the county.

3. Fuquay-Chipola-Troup

Nearly level to strongly sloping, well drained soils, some sandy to a depth of 20 to 40 inches and loamy below, some sandy to more than 40 inches and loamy below

This map unit is on uplands. It occurs as several widely scattered areas, dominantly in the central part of the county. Individual areas are irregular in shape. The largest is about 22 miles long and one-quarter mile to 9 miles wide. The unit is interspersed with small areas of somewhat poorly drained and poorly drained soils. It includes the towns of Malone and Greenwood and part of Cottondale.

The landscape is mostly one of nearly level to sloping areas and a few narrow, strongly sloping hillsides. In some areas, there is a fairly well developed drainage system of creeks, branches, and drainageways. In others, there is no well developed surface drainage system. The natural vegetation is slash and longleaf pine, live oak, red oak, post oak, white oak, laurel oak, dogwood, hickory, and an understory of native grasses, shrubs, and vines.

This map unit makes up about 101,000 acres, or 17 percent of the county. It is about 45 percent Fuquay soils, 25 percent Chipola soils, 10 percent Troup soils, and 20 percent soils of minor extent.

Fuquay soils are well drained. Typically, they have a surface layer of dark grayish brown coarse sand. The subsurface layer, extending to a depth of 32 inches, is yellowish brown loamy coarse sand. The subsoil is yellowish brown coarse sandy loam and sandy clay loam that is mottled in the lower part.

Chipola soils are well drained. Typically, they have a surface layer of dark brown loamy sand. The subsurface layer, extending to a depth of 34 inches, is yellowish red

and reddish yellow loamy coarse sand. The subsoil is red coarse sandy loam.

Troup soils are well drained. They have a surface layer of light yellowish brown sand. The subsurface layer, extending to a depth of 57 inches, is brownish yellow, pale brown, and reddish yellow sand. The subsoil is yellowish red sandy loam.

Minor in this unit are Blanton, Bonifay, Dothan, Orangeburg, Red Bay, Esto, Wicksburg, Grady, Plummer, Tifton, and Faceville soils.

Most areas have been cleared for cultivation or replanted to slash pine.

4. Orangeburg-Dothan-Red Bay

Nearly level to strongly sloping, well drained sandy or loamy soils that have a loamy subsoil within a depth of 20 inches

This map unit is on uplands. It occurs in all parts of the county but the extreme southwest corner. The largest areas are in the central and northwestern parts. Individual areas are irregular in shape and vary widely in size. The largest is about 19 miles long and one-half mile to 14 miles wide. This unit includes the town of Graceville.

This unit is nearly level to gently sloping in most areas but is sloping to strongly sloping along drainageways. There is a fairly well developed drainage system of creeks and branches. In some areas, there are wet depressions. The natural vegetation is slash and longleaf pine, live oak, laurel oak, red oak, white oak, hickory, sweetgum, dogwood, and an understory of woody shrubs and grasses.

This map unit makes up about 124,000 acres, or 21 percent of the county. It is about 40 percent Orangeburg soils, 25 percent Dothan soils, 10 percent Red Bay soils, and 25 percent soils of minor extent.

Orangeburg soils are well drained. Typically, they have a surface layer of brown loamy sand. The subsoil is yellowish red and red sandy clay loam.

Dothan soils are well drained. Typically, they have a surface layer of dark grayish brown loamy sand. The subsoil is sandy clay loam. The upper 49 inches is yellowish brown. The lower 22 inches is mottled brown, red, yellow, and gray.

Red Bay soils are well drained. They have a surface layer of dark reddish brown fine sandy loam and a subsoil of dark red sandy clay loam.

Minor in this unit are Fuquay, Tifton, Faceville, Esto, Greenville, Grady, and Leefield soils.

Most areas have been cleared for cultivation. A few have been replanted to slash pine.

5. Greenville-Faceville

Gently sloping to strongly sloping well drained soils, loamy or sandy to a depth of less than 20 inches and clayey below

This map unit is on uplands. It occurs on two areas in the central part of the county northwest of Marianna. The larger is about 9 miles long and 1 to 5 miles wide. The unit is interspersed with areas of poorly drained soils along creeks. It includes most of Marianna.

The landscape is one of gently sloping to sloping ridges and some strongly sloping hillsides along well developed creeks and branches. The natural vegetation is slash and longleaf pine, hickory, dogwood, magnolia, live oak, laurel oak, white oak, water oak, sweetgum, and an understory of woody shrubs and grasses.

This unit makes up about 25,000 acres, or 4 percent of the county. It is about 45 percent Greenville soils, 30 percent Faceville soils, and 25 percent soils of minor extent.

Greenville soils are well drained. They have a surface layer of dark reddish brown fine sandy loam. The subsoil, within a depth of 20 inches, is dark red sandy clay.

Faceville soils are well drained. They have a surface layer of brown loamy fine sand. The subsoil is sandy clay that is red in the upper part and mottled in the lower part.

Minor in this unit are Oktibbeha, Esto, Wicksburg, Red Bay, Grady, Tifton, Dothan, Orangeburg, and Chipola soils.

Most areas have been cleared for cultivation. Some are under urban development.

6. Dothan-Clarendon-Compass

Nearly level to strongly sloping, well drained to somewhat poorly drained soils, some sandy to a depth of less than 20 inches and loamy below, some sandy to 20 to 40 inches and loamy and clayey below

This map unit is on moderately high uplands. The largest area is in the western and northwestern part of the county. Another large area is between the communities of Sneads and Cypress. Small areas are in other parts of the county, but none occur in the northern half east of U.S. Highway 231. The unit is interspersed with shallow depressions of poorly drained soils. It includes the communities of Sneads, Cypress, Alford, and Cottondale.

The landscape is one of nearly level to gently sloping, moderately high ridges, sloping to strongly sloping hillsides along drainageways and depressions, poorly defined drainageways, and small to large swampy depressions. The native vegetation is slash and longleaf pine, white oak, red oak, laurel oak, live oak, water oak, hickory, dogwood, sweetgum, and an understory of woody shrubs and grasses.

This unit makes up about 119,000 acres, or 20 percent of the county. It is about 45 percent Dothan soils, 10 percent Clarendon soils, 9 percent Compass soils, and 36 percent soils of minor extent.

Dothan soils are well drained. Typically, they have a surface layer of dark grayish brown loamy sand. The

subsoil is sandy clay loam. The upper 49 inches is yellowish brown, and the lower 22 inches is mottled brown, red, yellow, and gray.

Compass soils are moderately well drained. Typically, the surface layer is dark gray loamy sand. The subsurface layer is yellowish brown and yellow sandy loam to a depth of 22 inches. The upper part of the subsoil is brownish yellow sandy loam and yellowish brown sandy clay loam. The lower part is mottled gray, yellow, brown, and red sandy clay and clay.

Clarendon soils are somewhat poorly drained. Typically, the surface layer is very dark grayish brown fine sandy loam. The subsurface layer is light yellowish brown fine sandy loam. The upper part of the subsoil is light yellowish brown fine sandy loam mottled with brown, gray, red, and yellow. The lower part is light gray sandy clay loam.

Minor in this unit are Grady, Leefield, Pansey, Alapaha, Fuquay, Orangeburg, Tifton, and Albany soils.

Much of the acreage has been cleared for crops and improved pasture. Some areas have been planted to pines. Others are under urban development.

Soils of the low flatwoods

The two map units in this group are moderately well drained to poorly drained, nearly level to gently sloping soils of the low flatwoods. Some are clayey within a depth of 20 inches. Some are sandy to 20 to 40 inches and loamy or clayey below. Others are sandy to 40 to 80 inches and loamy below. These soils are chiefly in the extreme northeastern and eastern parts of the county adjacent to the Apalachicola River flood plain. They occur to lesser extent in other parts of the county, but none are in the southwestern part.

7. Hornsville-Duplin-Bethera

Nearly level to gently sloping, moderately well drained and poorly drained soils, loamy or silty to a depth of less than 20 inches and clayey below

This map unit is in low flatwoods. It occurs as one area about 17 miles long and 1 to 3 miles wide in the eastern part of the county along the Chattahoochee River flood plain. It is interspersed with scattered depressions of very poorly drained soils.

The landscape is one of broad, nearly level to gently sloping low flatwoods. The native vegetation is loblolly pine, longleaf pine, slash pine, sweetgum, blackgum, water oak, live oak, laurel oak, hickory, dogwood, and an understory of woody shrubs and grasses.

This unit makes up about 18,000 acres, or 3 percent of the county. It is about 35 percent Hornsville soils, 35 percent Duplin soils, 15 percent Bethera soils, and 15 percent minor soils.

Hornsville soils are moderately well drained. Typically, the surface layer is dark gray fine sandy loam 6 inches thick. The subsurface layer is very pale brown fine sandy loam 4 inches thick. The subsoil is sandy clay. The upper part is yellowish brown, and the lower part is mottled brown, gray, and red.

Duplin soils are moderately well drained. Typically, the surface layer is very dark gray fine sandy loam 9 inches thick. The upper 8 inches of the subsoil is light yellowish brown sandy clay loam. Below this is light yellowish brown and yellowish brown clay mottled with yellow, brown, red, and gray. The lower part is mottled red, gray, brown, and yellow clay.

Bethera soils are poorly drained. Typically, the surface layer is very dark gray silt loam 4 inches thick. The subsoil is light gray clay loam in the upper part and light gray clay in the lower part.

Minor in this unit are Grady, Apalachee, Tifton, Alapaha, Clarendon, Orangeburg, and Chipola soils.

Most of this unit is wooded. A few acres have been cleared and cultivated or seeded to improved pasture. Some areas have been cleared and replanted to slash pine.

8. Clarendon-Compass-Plummer

Nearly level to strongly sloping, moderately well drained to poorly drained soils, some sandy to a depth of less than 20 inches and loamy below, some sandy to 20 to 40 inches and loamy and clayey below, some sandy to more than 40 inches and loamy below

This map unit is in low flatwoods. It occurs as several widely scattered areas, dominantly in the southeastern part of the county. Individual areas are irregular in shape. Many are adjacent to steeper hillsides. The unit is interspersed with very poorly drained soils in swamps. It includes Ocheesee Pond and part of the community of Grand Ridge.

The landscape is dominantly one of nearly level to sloping areas and a few strongly sloping hillsides. Scattered depressions and swamps are typical throughout most areas. The natural vegetation on the moderately well drained and somewhat poorly drained soils is mostly slash and longleaf pine, sweetgum, water oak, laurel oak, live oak, and an understory of woody shrubs and grasses. Slash and longleaf pine, sweetgum, water oak, blackgum, and cypress grow on the poorly drained soils.

This map unit makes up about 35,000 acres, or 6 percent of the county. It is about 20 percent Clarendon soils, 20 percent Compass soils, 20 percent Plummer soils, and 40 percent minor soils.

Clarendon soils are somewhat poorly drained. Typically, the surface layer is very dark grayish brown fine sandy loam and the subsurface layer is light yellowish brown fine sandy loam. The upper part of the subsoil is light yellowish brown fine sandy loam mottled with brown, gray, red, and yellow. The lower part is light gray sandy clay loam.

Compass soils are moderately well drained. Typically, the surface layer is dark gray loamy sand. The subsurface layer, extending to a depth of 22 inches, is yellowish brown and yellow sandy loam. The upper part of the subsoil is brownish yellow sandy loam and yellowish brown sandy clay loam. The lower part is mottled gray, yellow, brown, and red sandy clay and clay.

Plummer soils are poorly drained. Typically, the surface layer is dark gray sand. The subsurface layer, extending to a depth of 56 inches, is dark grayish brown, gray, and light gray sand. The subsoil is light gray sandy clay loam mottled with yellow, brown, and red.

Minor in this unit are Leefield, Alapaha, Albany, Blanton, Pansey, Grady, Compass, Dorovan, Pamlico, and Rutlege soils.

Much of this unit is still in natural vegetation. Some areas have been cleared for crops and improved pasture. Others have been planted to pine trees.

Soils of the swamps, very wet areas, and river flood plains

The map unit in this group consists of poorly drained and very poorly drained, nearly level soils in depressions and on river flood plains. Some are organic soils underlain by sandy material. Others are loamy and clayey within a depth of 20 inches.

9. Grady-Bibb-Pamlico

Nearly level, poorly drained and very poorly drained soils, some sandy or loamy to a depth of less than 20 inches and clayey or loamy below, others organic over sandy material

This map unit is on river flood plains, in depressions, and in swamps. Areas of the unit are most common in the central and western parts of the county, but one is in the southeastern part along the Apalachicola River. The largest area is along the Chipola River flood plain. Most areas are long and narrow. Streams and rivers are common.

This unit is nearly level. Many areas are in depressions. The natural vegetation is mostly wetland hardwoods, such as sweetbay, sweetgum, red maple, water oak, water tupelo, blackgum, poplar, and in places, cypress and titi.

This unit makes up about 62,000 acres, or 10 percent of the county. It is about 26 percent Grady soils, 18 percent Bibb soils, 10 percent Pamlico soils, and 46 percent soils of minor extent.

Grady soils are poorly drained. Typically, the surface layer is dark gray fine sandy loam. The subsoil is grayish brown clay in the upper part and gray clay mottled with yellow, red, and brown in the lower part.

Bibb soils are poorly drained. Typically, the surface layer is very dark grayish brown loamy sand. Below this is gray sandy loam over light brownish gray, stratified loamy sand and sandy loam.

Pamlico soils are very poorly drained. Typically, they are black muck about 36 inches thick over very dark grayish brown sand.

Minor in this unit are the Apalachee, Dorovan, Rutlege, Bethera, Alapaha, Pansey, Clarendon, Herod, and Yonges soils.

Almost all of this unit is still in natural vegetation.

Soil maps for detailed planning

The map units shown on the detailed soil maps at the back of this publication represent the kinds of soil in the survey area. They are described in this section. The descriptions together with the soil maps can be useful in determining the potential of a soil and in managing it for food and fiber production; in planning land use and developing soil resources; and in enhancing, protecting, and preserving the environment. More information for each map unit, or soil, is given in the section "Use and management of the soils."

Preceding the name of each map unit is the symbol that identifies the soil on the detailed soil maps. Each soil description includes general facts about the soil and a brief description of the soil profile. In each description, the principal hazards and limitations are indicated, and the management concerns and practices needed are discussed.

The potential of a soil is the ability of that soil to produce, yield, or support the given structure or activity at a cost expressed in economic, social, or environmental units of value. The criteria used for rating soil potential include the relative difficulty or cost of overcoming soil limitations, the continuing limitations after measures in general use in overcoming the limitations are applied, and the suitability of the soil relative to other soils in Jackson County.

A five-class system of soil potential is used. The classes are defined as follows:

Very high potential. Soil limitations are minor or are relatively easy to overcome. Performance for the intended use is excellent. Soils rated with very high potential are the best in the county for the particular use.

High potential. Some soil limitations exist, but practices necessary to overcome the limitations are available at reasonable cost. Performance for the intended use is good.

Medium potential. Soil limitations exist and can be overcome with recommended practices; limitations, however, are mostly of a continuing nature and require practices that have to be maintained or that are more difficult or costly than average. Performance for the intended use ranges from fair to good.

Low potential. Serious soil limitations exist, and they are difficult to overcome. Practices necessary to over-

come the limitations are relatively costly compared to those required for soils of higher potential. Necessary practices can involve environmental values and considerations. Performance for the intended use is poor or unreliable.

Very low potential. Very serious soil limitations exist, and they are most difficult to overcome. Initial cost of practices and cost of maintenance are very high compared to those of soils with high potential. Environmental values are usually depreciated. Performance for the intended use is inadequate or below acceptable standards.

The map units on the detailed soil maps represent an area on the landscape made up mostly of the soil or soils for which the unit is named. Most of the delineations shown on the detailed soil map are phases of soil series.

Soils that have a profile that is almost alike make up a *soil series*. Except for allowable differences in texture of the surface layer or of the underlying substratum, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement in the profile. A soil series commonly is named for a town or geographic feature near the place where a soil of that series was first observed and mapped. The Chipola series, for example, was named for the Chipola River in Jackson County.

Soils of one series can differ in texture of the surface layer or in the underlying substratum and in slope, erosion, stoniness, salinity, wetness, or other characteristics that affect their use. On the basis of such differences, a soil series is divided into phases. The name of a *soil phase* commonly indicates a feature that affects use or management. For example, Compass loamy sand, 2 to 5 percent slopes, is one of several phases within the Compass series.

Some map units are made up of two or more dominant kinds of soil. Such map units are called soil complexes, soil associations, and undifferentiated groups.

A *soil complex* consists of areas of two or more soils that are so intricately mixed or so small in size that they cannot be shown separately on the soil map. Each area includes some of each of the two or more dominant soils, and the pattern and proportion are somewhat similar in all areas. Wicksburg-Esto complex, 2 to 5 percent slopes, is an example.

A *soil association* is made up of soils that are geographically associated and are shown as one unit on the map because it is not practical to separate them. A soil association has considerable regularity in geographic pattern and in the kinds of soil that are a part of it. The extent of the soils can differ appreciably from one delineation to another; nevertheless, interpretations can be made for use and management of the soils. Yonges-Herod association is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because there is little value in separating them. The pattern and proportion of the soils are not uniform. An area shown on the map has at least one of the dominant (named) soils or may have all of them. Bibb soils is an undifferentiated group in this survey area.

Most map units include small, scattered areas of soils other than those that appear in the name of the map unit. Some of these soils have properties that differ substantially from those of the dominant soil or soils and thus could significantly affect use and management of the map unit. These soils are described in the description of each map unit. Some of the more unusual or strongly contrasting soils that are included are identified by a special symbol on the soil map.

Most mapped areas include places that have little or no soil material and support little or no vegetation. Such places are called *miscellaneous areas*; they are delineated on the soil map and given descriptive names. Pits is an example. Some of these areas are too small to be delineated and are identified by a special symbol on the soil map.

The acreage and proportionate extent of each map unit are given in table 4, and additional information on properties, limitations, capabilities, and potentials for many soil uses is given for each kind of soil in other tables in this survey. (See "Summary of tables.") Many of the terms used in describing soils are defined in the Glossary.

Soil descriptions

1—Alapaha loamy sand. This poorly drained, nearly level soil is in wet depressions and along poorly defined drainageways in the flatwoods. Slopes are 0 to 2 percent. They are smooth to concave.

Typically, the surface and subsurface layers are loamy sand about 34 inches thick. The upper 6 inches is black, the next 6 inches is dark gray, and the lower 22 inches is gray. The subsoil is sandy clay loam to a depth of 62 inches or more. The upper 14 inches is light gray mottled with yellowish brown, strong brown, red, and light yellowish brown. The lower 14 inches has similar colors, and is about 20 percent plinthite.

Included with this soil in mapping are small areas of Pansey, Leefield, and Clarendon soils and small areas where the subsoil is sandy clay. Small areas of soils that are similar but have slopes of 2 to 5 percent are also included. The included soils make up less than 20 percent of any one mapped area.

In most years, the water table is within a depth of 5 inches for 3 to 6 months and most areas are flooded for 1 to 2 months. Permeability is rapid in the surface and subsurface layers and moderately slow in the subsoil. Internal drainage is slow; it is impeded by the shallow water table. Natural fertility and the organic matter con-

tent are moderate in the top 8 inches but are low below 8 inches.

The natural vegetation is slash and longleaf pine, scattered sweetgum, blackgum, water oak, and red maple, and an understory of scattered inkberry, waxmyrtle, a few sawpalmetto, and abundant pineland threeawn. Most areas are cutover forest or woodland.

This soil is not suitable for cultivated crops or improved pasture.

This soil has high potential for loblolly, longleaf, and slash pine, but a good water control system to remove excess water is needed if the potential productivity is to be realized. The equipment limitation is the main management concern. Slash and loblolly pine are the most suitable for planting.

The potential is medium for septic tank absorption fields, playgrounds, small commercial buildings, local roads and streets, and shallow excavations. The potential is low for trench sanitary landfill and dwellings without basements. Water control and control of flooding or protection from ponding are needed. In addition, mounding is needed for septic tank absorption fields.

Capability subclass Vw.

2—Albany sand, 0 to 5 percent slopes. This somewhat poorly drained, nearly level to gently sloping soil is along poorly defined drainageways and on low side slopes. Slopes are smooth to convex.

Typically, the surface layer is grayish brown sand about 8 inches thick. The subsurface layer is sand to a depth of about 46 inches. The upper 18 inches is pale brown, and the lower 20 inches is light gray mottled with pale brown. The upper 21 inches of the subsoil is light yellowish brown sandy loam mottled with gray, red, and yellow. In places the texture of this layer ranges to sandy clay loam. The lower 13 inches is light gray sandy clay loam mottled with yellow.

Included with this soil in mapping are small areas of Blanton, Bonifay, Foxworth, Fuquay, Lakeland, Leefield, Compass, and Troup soils. Also included are small areas of soils that have a thick, dark surface layer, a few small areas that are better drained, and a few small areas of soils that are similar but have slopes of 5 to 8 percent. The included soils make up less than 15 percent of any one mapped area.

The water table is between depths of 12 and 30 inches for 1 to 2 months in most years. Available water capacity is very low in the surface and subsurface layers and low to medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural fertility is low. The organic matter content is generally medium to low, but in a few small areas it is moderately high.

The natural vegetation is longleaf and slash pine and some hardwoods, chiefly blackjack, post, and blue oak, and an understory of inkberry, waxmyrtle, and pineland threeawn.

Limitations are severe because of the hazards of erosion and wetness. Intensive erosion control and water control are needed. Row crops should be planted on the contour in strips alternating with close growing crops. The crop rotation should include close growing crops at least two-thirds of the time. Soil-improving cover crops and all crop residue should be left on the land or plowed under. Drains are needed to intercept hillside seepage water. Drainage and bedding are needed for crops that are damaged by wetness.

This soil is moderately well suited to pasture and hay crops. Coastal bermudagrass and bahiagrasses are moderately well suited, but response to fertilizer and lime is only moderate. Controlled grazing is needed in maintaining vigorous plants for maximum yields and a good ground cover.

The potential is moderately high for loblolly, longleaf, and slash pine. Equipment limitations and seedling mortality are the main management problems. Loblolly and slash pine are the most suitable for planting.

If water is controlled, the potential is high for septic tank absorption fields, small commercial buildings, and local roads and streets. It is medium for playgrounds, dwellings without basements, and shallow excavations. Mounding is needed for septic tank absorption fields, and the side walls of shallow excavations should be shored. The potential is low for sanitary landfills, even if water is controlled.

Capability subclass IIIe.

3—Apalachee clay. This poorly drained, nearly level soil is on flood plains along major streams and rivers. Slopes are generally smooth and less than 2 percent.

Typically, the surface layer is reddish brown clay about 18 inches thick. The underlying layer is clay to a depth of 60 inches or more. The upper 7 inches is reddish brown mottled with gray, dark reddish gray, and yellowish red. Below 25 inches the mottles are dark yellowish brown, gray, and yellowish red.

Included with this soil in mapping are small areas of Bethera, Blanton, Duplin, Esto, Grady, Hornsville, and Wicksburg soils. Also included are small areas of soils that are similar to this Apalachee soil but are somewhat poorly drained. In a few areas there is less clay in the lower part of the soil. The included soils make up less than 15 percent of any one mapped area.

In most years the water table is within a depth of 20 inches for 3 to 6 months and the soil is flooded for 1 to 3 months in winter and spring. The available water capacity is medium to high. Permeability is slow. Internal drainage is slow. Natural fertility is high in the top 16 inches, and the organic matter content is medium. Both are low below 16 inches.

The natural vegetation is water-tolerant species, chiefly water oak, pond pine, water tupelo, blackgum, American sweetgum, water hickory, poplar, black willow, American beech, black oak, sugar hackberry, and sweet-

bay magnolia. Most areas are under natural vegetation, but most of the merchantable timber has been cut out or harvested. Small areas have been cleared and planted to pasture or utilized as native pasture.

This soil is not suited to crops and is only moderately well suited to improved pasture. Frequent flooding and wetness, the major limitations, are difficult to overcome. Late in spring and in summer the soil is normally not under water and can be utilized as pasture. If well managed, it has high potential for good quality pasture.

The potential is high for slash and loblolly pine, sweetgum, water oak, and eastern cottonwood. Severe equipment limitations and seedling mortality are the main limiting factors. Slash and loblolly pine are the most suitable for planting.

The potential is low for sanitary landfill and small commercial buildings. Water and flood control are needed. Larger footings and foundations are needed for small commercial buildings. The potential is low for shallow excavations even if water and flooding are controlled. It is very low for septic tank absorption fields, playgrounds, local roads and streets, and dwellings without basements. Water control and protection from flooding are needed for all of these uses. In addition, a larger absorption field is needed for septic tanks. The surface should be stabilized if the soil is to be used as a playground. The structural strength should be increased if the soil is used as a site for local roads and streets.

Capability subclass Vw.

4—Bethera silt loam. This poorly drained, nearly level soil is in low flatwood areas that are saturated or flooded at some season. Slopes are 0 to 2 percent. They are commonly slightly convex, but in depressions they are slightly concave.

Typically, the surface layer is very dark gray silt loam about 4 inches thick. The subsurface layer is gray silt loam about 2 inches thick. The subsoil, which extends to a depth of 72 inches or more, is light gray clay loam in the upper 12 inches and light gray clay in the lower 54 inches. It is mottled with brown, red, and yellow.

Included with this soil in mapping are small areas of Alapaha, Clarendon, Duplin, Hornsville, Grady, and Pansey soils. Also included are a few areas of soils that are similar to this Bethera soil but have a slightly stratified clayey subsoil, a few areas where slopes are 3 percent, and a few small areas where the surface layer is black and is more than 8 inches thick. The included soils make up less than 15 percent of any one mapped area.

The water table is within a depth of 15 inches for 3 to 5 months in most years. Some slightly depressed areas are flooded annually for 1 to 3 months. The available water capacity is medium to a depth of about 8 inches and is moderately high below. Permeability is moderate in the surface and subsurface layers and is moderately slow to very slow in the subsoil. Internal drainage is slow; it is impeded by the shallow water table. Natural fertility and the organic matter content are moderate to moderately high in the top 8 inches but are low below 8 inches.

The natural vegetation is loblolly and slash pine, sweetgum, blackgum, and water oak. The understory is waxmyrtle, inkberry, scattered sawpalmetto, and pineland threeawn. Most areas are cutover forest. A few have been cleared for improved pasture. Some are used for soybeans, corn, and small grain.

Limitations are very severe for cultivated crops because of wetness and poor soil quality. A good water control system is needed before the soil can be made suitable for most crops. It should be designed to remove excess surface water during heavy rains as well as excess internal water. Seedbed preparation should include bedding the rows. Fertilizing, liming, and keeping a close growing, soil-improving crop on the soil at least three-fourths of the time also are important. All crop residue and soil-improving crops should be plowed under.

This soil is moderately well suited to pasture, for example, Coastal bermudagrass and bahiagrass. Surface drainage, fertilization, and lime are needed. Grazing should be controlled so that plants remain vigorous and yields high.

This soil has high potential for loblolly, slash, and longleaf pine. Removal of excess surface water and water control are needed if the potential productivity is to be realized. Loblolly and slash pine are the most suitable for planting.

The potential is low for septic tank absorption fields, playgrounds, small commercial buildings, and shallow excavations. It is very low for trench sanitary landfills, local roads and streets, and dwellings without basements. Water control is needed for all of these uses. In addition, mounding and larger absorption fields are needed for septic tanks.

Capability subclass IVw.

5—Bibb soils. These are nearly level, poorly drained soils in drainageways and on flood plains. The unit consists of the Bibb soils and a similar soil that does not occur in a regular pattern. One of these soils or both make up about 80 percent of each mapped area. Areas are mostly long and narrow and range from about 50 to 500 acres. Individual areas of each soil range from about 15 to 200 acres. They are large enough to be mapped separately, but considering the present and predicted use and the fact that some areas are inaccessible, they are mapped as one unit.

The composition of this unit is more variable than that of most other units of the county, but it has been controlled well enough for the expected use of the soils.

Typically, the surface layer of the Bibb soil is about 4 inches of very dark grayish brown loamy sand. The subsurface layer is about 14 inches of grayish brown loamy

sand. Below this is about 20 inches of gray sandy loam mottled with brownish yellow and yellowish brown. Between depths of 38 and 62 inches is light yellowish brown, stratified loamy sand and sandy loam.

The Bibb soil has a water table within a depth of 10 inches for about 6 months or more in most years. It is also subject to frequent flooding. Permeability is moderate, and the available water capacity is medium.

The soil similar to Bibb soil is sandy clay loam below the surface and subsurface layers. It has a water table within a depth of 10 inches for 6 months or more in most years, and it is subject to frequent flooding. Permeability is moderately slow and the available water capacity is medium.

Minor soils make up about 20 percent of the unit. Most extensive are the Alapaha, Albany, Clarendon, Foxworth, Grady, Leefield, Pansey, Plummer, Rutlege, and Compass soils. They generally occur near the edges of the mapped areas or on low knolls and ridges on the flood plain.

The natural vegetation is water-tolerant species of bay, gum, beech, cypress, and oak. The understory is waxmyrtle, titi, and other water-tolerant shrubs. All areas are in native vegetation. In some of the more accessible areas marketable trees have been cut.

These soils are not suited to crops. They are only moderately well suited to improved pasture. Flooding and wetness, the major limitations, are difficult to overcome. If the excess water is removed and the soils are well managed, the potential is high for production of good quality pasture.

If water can be controlled, these soils have high potential for loblolly pine, water oak, and sweetgum. Severe equipment limitations and seedling mortality are the main limiting factors. Eastern cottonwood, loblolly pine, sweetgum, and yellow-poplar are the most suitable for planting.

The potential is low for playgrounds, small commercial buildings, local roads and streets (fig. 2), and shallow excavations. The potential is very low for septic tank absorption fields, trench sanitary landfills, and dwellings without basements. Water control and protection from flooding are needed for all of these uses. In addition, mounding is needed for septic tank absorption fields and sealing or lining is needed for trench sanitary landfills.

Capability subclass Vw.

6—Blanton coarse sand, 0 to 5 percent slopes. This moderately well drained, nearly level to gently sloping upland soil occurs throughout the county. Slopes are smooth to convex.

Typically, the surface layer is brown coarse sand about 8 inches thick. The underlying layers are coarse sand to a depth of about 63 inches. The upper 7 inches is yellowish brown; the next 26 inches is light yellowish brown; and the lower 22 inches is very pale brown mottled with light yellowish brown. The upper 4 inches of the subsoil is light yellowish brown loamy coarse sand mottled with yellowish brown. The subsoil is sandy loam to a depth of 80 inches or more. It is yellowish brown mottled with light brownish yellow, light gray, pale brown, and yellowish red.

Included with this soil in mapping are small areas of Albany, Bonifay, Foxworth, Fuquay, Lakeland, Chipola, and Troup soils. Also included are small areas of soils that are similar to this Blanton soil but are sandy clay or clay in the lower part of the subsoil. In a few small areas the soil is 5 to 10 percent plinthite within a depth of 60 inches. The included soils make up less than 15 percent of any one mapped area.

The water table is perched above the subsoil for less than 1 month in most years. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility and the organic matter content are low throughout.

Natural vegetation is slash pine, longleaf pine, live oak, post oak, red oak, huckleberry, and dogwood and an understory of native shrubs and pineland threeawn. Most areas are cutover woodland or have been cleared for crops or bahiagrass improved pasture.

This soil has severe limitations for most cultivated crops. Droughtiness, rapid leaching of plant nutrients, and slope greatly limit the choice of plants and reduce potential yields. Row crops should be planted on the contour in strips alternating with strips of close growing crops. The crop rotation should include close growing cover crops at least three-fourths of the time. Soil-improving cover crops and all crop residue should be plowed under. The soil is too steep for irrigation.

This soil is moderately suited to pasture and hay crops. Deep rooted Coastal bermudagrass and the improved bahiagrasses are well suited, but yields are reduced by periodic droughts. Regular fertilization and liming are needed. Grazing should be controlled to maintain plant vigor and a good ground cover.

This soil has moderately high potential for longleaf, loblolly, and slash pine. Slash pine is the most suitable for planting.

The potential is very high for septic tank absorption fields, local roads and streets, and dwellings without basements. No corrective measures are needed. The potential is high for small commercial buildings, but land shaping and an appropriate building design are needed. The potential is medium for trench sanitary landfill. Sealing or lining of the trench is needed. The potential is medium for playgrounds if the land is shaped and the surface stabilized. The potential is medium for shallow excavations if the side walls are shored.

Capability subclass IIIs.

7—Blanton coarse sand, 5 to 8 percent slopes. This moderately well drained, sloping soil is adjacent to

depressions and well defined drainageways. Slopes are smooth to convex.

Typically, the surface layer is dark grayish brown coarse sand about 4 inches thick. The subsurface layer is coarse sand to a depth of about 60 inches. It is in shades of brown or yellow and has light colored mottles in the lower part. The subsoil is sandy clay loam to a depth of 80 inches or more. The upper 10 inches is mottled brownish yellow, light gray, strong brown, and yellowish red and the lower 10 inches is gray mottled with brown and red.

Included with this soil in mapping are small areas of Albany, Bonifay, Foxworth, Fuquay, Lakeland, Chipola, and Troup soils and small areas of soils that are similar to this Blanton soil but are sandy clay or clay in the lower part of the subsoil. Also included are a few areas where slopes are 0 to 5 percent or 8 to 12 percent and a few areas of soils that are 5 to 10 percent plinthite within a depth of 60 inches. The included soils make up less than 15 percent of any one mapped area.

The water table is perched above the subsoil for less than 1 month in most years. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility and the organic content are low.

Natural vegetation is slash and longleaf pine, live oak, post oak, and red oak, huckleberry, and dogwood and an understory of native shrubs and pineland threeawn. Most areas are cutover woodland. Some have been cleared for crops or bahiagrass improved pasture.

This soil has very severe limitations for most cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce potential yields. Row crops should be planted on the contour in strips alternating with strips of close growing crops. The crop rotation should include close growing cover crops at least two-thirds of the time. Soil-improving cover crops and all crop residue should be left on the ground or plowed under. If water is readily available, irrigation of high value crops is usually feasible.

This soil is moderately well suited to pasture and hay crops. Deep rooted Coastal bermudagrass and the improved bahiagrasses are well suited, but periodic drought reduces yields. Regular additions of fertilizer and lime are needed. Grazing should be controlled to maintain plant vigor and a good ground cover.

This soil has moderately high potential for longleaf, loblolly, and slash pine. Slash pine is the most suitable for planting.

The potential is very high for septic tank absorption fields, local roads and streets, and dwellings without basements. No corrective measures are needed. The potential is high for small commercial buildings, but land shaping and appropriate building design are needed. The potential is medium for trench sanitary landfill. Sealing or lining the trench is needed. The potential is medium for playgrounds if the land is shaped and the surface stabilized. It is medium for shallow excavations if the side walls are shored.

Capability subclass IVs.

8—Bonifay sand, 0 to 5 percent slopes. This well drained, nearly level to gently sloping soil is on narrow to moderately broad ridges of the uplands. Areas are generally surrounded by long, steeper slopes that extend from the ridges to narrow streambeds or natural drainageways. Slopes are smooth to convex.

Typically, the surface layer is dark grayish brown sand 5 inches thick. The subsurface layer is sand to a depth of 35 inches. The upper 9 inches of this layer is yellowish brown, and the lower 21 inches is light yellowish brown. Below this is 10 inches of brownish yellow loamy sand. The subsoil begins at a depth of about 45 inches and extends to 68 inches or more. The upper 13 inches is light yellowish brown sandy loam mottled with light gray and yellowish brown. The next 5 inches is yellowish brown sandy clay loam mottled with yellowish red, strong brown, and light yellowish brown. The lower 5 inches is brownish yellow sandy clay loam mottled with yellowish red, strong brown, and pale brown. The subsoil contains plinthite.

Included with this soil in mapping are small areas of Albany, Blanton, Foxworth, Fuquay, Lakeland, Chipola, and Troup soils and small areas where the subsoil is more than 25 percent plinthite. In some areas the layers of plinthite are firm or cemented. Also included are small areas where slopes are 5 to 8 percent and a few small areas where plinthite is below a depth of 60 inches. The included soils make up less than 15 percent of any one mapped area.

The water table is usually below a depth of 72 inches, but it is perched above the subsoil for 1 to 5 days after heavy rains. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility and the organic matter content are low throughout.

The natural vegetation is a forest of longleaf and slash pine and a mixture of hardwoods, including blackjack, live, turkey, and post oak and persimmon. The understory is huckleberry, native shrubs, and moderately sparse pineland threeawn.

This soil has severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce potential yields. Row crops should be planted on the contour in alternating strips with close growing, soil-improving crops. The crop rotation should include close growing, soil-improving crops at least two-thirds of the time. These soil-improving crops and the residue of all other crops should be plowed under. All crops should be limed and fertilized. Where irrigation water is readily available, irrigation of

such high value crops as watermelons and tobacco is usually feasible.

The soil is moderately suited to improved pasture. Deep rooted plants, such as Coastal bermudagrass and improved bahiagrasses, are well suited. If limed and fertilized, they grow well and produce good ground cover. Controlled grazing is needed in maintaining vigorous plants for maximum yields. Extended severe drought occasionally greatly reduces yields.

This soil has moderately high potential for slash, loblolly, and longleaf pine. Slash pine is the most suitable for planting.

The potential is very high for septic tank absorption fields, local roads and streets, and dwellings without basements. No special measures are needed. The potential is high for playgrounds and small commercial buildings. Surface stabilization is needed for playgrounds, and land shaping is needed for small commercial buildings. The potential is medium for trench sanitary landfill, but sealing or lining is needed. The potential is medium for shallow excavations if the side walls are shored.

Capability subclass IIIs.

9—Bonifay sand, 5 to 8 percent slopes. This well drained, sloping soil is adjacent to narrow streambeds or drainageways. Slopes are generally smooth.

Typically, the surface layer is dark grayish brown sand about 4 inches thick. The subsurface layer is sand to a depth of about 34 inches. The upper 10 inches is yellowish brown, and the lower 20 inches is light yellowish brown. Below this is about 10 inches of brownish yellow loamy sand. The subsoil begins at a depth of about 44 inches and extends to 68 inches or more. The upper 12 inches is light yellowish brown sandy loam mottled with light gray and yellowish brown. The next 6 inches is yellowish brown sandy clay loam mottled with yellowish red, strong brown, and light yellowish brown. The lower 6 inches is brownish yellow sandy clay loam mottled with yellowish red, strong brown, and pale brown. The subsoil contains plinthite.

Included with this soil in mapping are small areas of Albany, Blanton, Foxworth, Fuquay, Lakeland, Chipola, and Troup soils and small areas of soils that have similar properties but are 30 percent plinthite. In some areas, the layers of plinthite are cemented. Also included are small areas of soils that are similar but have slopes of 0 to 5 percent or 8 to 12 percent and a few small areas where plinthite occurs below a depth of 60 inches. The included soils make up less than 15 percent of any one mapped area.

The water table is usually below a depth of 72 inches, but it is perched above the subsoil for 1 to 5 days after heavy rains. Seepage at the base of slopes is common after rains. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility and the organic matter content are low throughout.

Natural vegetation is a forest of slash and longleaf pine and a mixture of hardwoods, including blackjack oak, turkey oak, live oak, post oak, and persimmon. The understory is huckleberry, native shrubs, and moderately sparse pineland threeawn.

This soil has very severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce potential yields. Row crops should be planted on the contour in alternating strips with close growing, soil-improving crops. The crop rotation should include close growing, soil-improving crops at least three-fourths of the time. These soil-improving crops and the residue of all other crops should be plowed under. All crops should be limed and fertilized.

The soil is moderately suited to improved pasture. Deep rooted plants, such as Coastal bermudagrass and improved bahiagrasses, are well suited. If limed and fertilized, they grow well and produce good ground cover. Controlled grazing is needed to maintain vigorous plants for maximum yields. Extended severe drought occasionally greatly reduces yields.

This soil has moderately high potential for slash, loblolly, and longleaf pine. Slash pine is the most suitable for planting.

The potential is very high for septic tank absorption fields, local roads and streets, and dwellings without basements. No special measures are needed. The potential is high for small commercial buildings. An appropriate building design should be used; land shaping may also be needed. The potential is medium for trench sanitary landfill if the trench is sealed or lined with impervious material. The potential is medium for playgrounds if the land is shaped and the surface stabilized. It is medium for shallow excavations if the side walls are shored.

Capability subclass IVs.

10—Chipola loamy sand, 0 to 5 percent slopes. This well drained, nearly level to gently sloping soil occurs throughout the county on broad uplands and stream terraces. Slopes are smooth to convex.

Typically, the surface layer is dark brown loamy sand about 10 inches thick. The subsurface layers are loamy coarse sand to a depth of about 35 inches. The upper 12 inches is yellowish red, the next 10 inches is reddish yellow, and the lower 3 inches is red. The subsoil is 21 inches of red coarse sandy loam and about 19 inches of red loamy coarse sand. The underlying material is red coarse sand that extends to 94 inches or more.

Included with this soil in mapping are areas of soils that are similar to this Chipola soil but have no noticeable decrease in clay content within a depth of 60 inches. Also included are small areas of Blanton, Esto, Fuquay, Lakeland, Troup, and Wicksburg soils and a few

areas of soils that are similar to this Chipola soil but have slopes of 5 to 8 percent. In a few small areas the subsoil is more clayey than is typical. The included soils make up less than 20 percent of any one mapped area.

The available water capacity is low in the surface and subsurface layers, medium in the subsoil, and low in the substratum. Permeability is rapid in the surface and subsurface layers, moderately rapid in the subsoil, and rapid to very rapid in the substratum. Natural fertility is low, and the organic content is moderately low. The water table is below 72 inches.

The natural vegetation is slash pine, longleaf pine, live oak, post oak, red oak, and dogwood. The understory is native shrubs, including huckleberry, southern dewberry, smilax, Virginia creeper, American beautyberry, muscadine grape, yaupon, and sparse pineland threeawn.

This soil has moderate limitations for cultivated crops. It can be cultivated safely under ordinary good farming methods, but droughtiness and rapid leaching of plant nutrients limit the choice of crops and the potential yields. Corn, soybeans, and peanuts can be grown. Row crops should be planted on the contour in alternate strips with cover crops. The crop rotation should include cover crops at least half the time. The cover crops and all crop residue should be plowed under. For the best yields, good seedbed preparation, fertilization, and liming are needed. Where water is readily available, irrigation of some high value crops is usually feasible.

The soil is well suited to pasture. Deep rooted plants, such as Coastal bermudagrass and bahiagrass, are well suited. Yields are good if the crop is fertilized and limed. Controlled grazing is essential in maintaining vigorous plants for maximum yields and good cover.

The potential is moderately high for slash, loblolly, and longleaf pine. Slash and loblolly pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, small commercial buildings, local roads and streets, and buildings without basements. No special corrective measures are needed. The potential is high for trench sanitary landfill if the trench is sealed or lined with impervious material. The potential is high for shallow excavations if side walls are shored.

Capability subclass IIs.

11—Chipola loamy sand, 5 to 8 percent slopes. This well drained, sloping soil occurs throughout the county, dominantly along drainageways. Slopes are smooth to convex.

Typically, the surface layer is dark brown loamy sand about 8 inches thick. The subsurface layer is loamy coarse sand to a depth of about 34 inches. The upper 12 inches is yellowish red, and the lower 14 inches is reddish yellow. The subsoil is 22 inches of red coarse sandy loam and 20 inches of red loamy coarse sand. The underlying material is red to yellowish red loamy coarse sand or coarse sand that extends to 80 inches or more.

Included with this soil in mapping are areas of soils that are similar to this Chipola soil but have no decrease in clay content within a depth of 60 inches. Also included are small areas of Blanton, Bonifay, Esto, Fuquay, Lakeland, Troup, and Wicksburg soils and a few small areas of soils that are similar to this Chipola soil but have slopes of 8 to 12 percent. In a few small areas the subsoil is more clayey than is typical. The included soils make up less than 20 percent of any one mapped area.

The available water capacity is low in the surface and subsurface layers, medium in the subsoil, and low in the substratum. Permeability is rapid in the surface and subsurface layers, moderately rapid in the subsoil, and rapid to very rapid in the substratum. The natural fertility is low, and the organic content is moderately low.

The natural vegetation is slash pine, longleaf pine, live oak, post oak, red oak, and dogwood. The understory is native shrubs and grasses, including huckleberry, southern dewberry, smilax, Virginia creeper, American beautyberry, muscadine grape, yaupon, and sparse pineland threeawn.

This soil has severe limitations for cultivated crops. Special soil-improving measures are needed. Droughtiness and rapid leaching of plant nutrients severely limit the suitability of this soil for most row crops. The slopes make cultivation more difficult and increase the hazard of erosion. Cultivated row crops should be planted on the contour in strips alternating with wider strips of close growing, soil-improving crops. The crop rotation should include close growing crops at least two-thirds of the time. All crops should be fertilized and limed. Soil-improving cover crops and the residue of all other crops should be left on the land or plowed under.

The soil is moderately well suited to pasture. Deep rooted plants, such as Coastal bermudagrass and bahiagrasses, are well suited. The slopes increase the erosion hazard and reduce the potential yields. Good stands of grass can be produced if the crop is fertilized and limed. Controlled grazing is needed in maintaining vigorous plants and good protective cover.

Under a high level of management, the potential is moderately high for slash, loblolly, and longleaf pine. Slash and loblolly pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, local roads and streets, and dwellings without basements. No special corrective measures are needed. The potential is high for trench sanitary landfill, playgrounds, and small commercial buildings. Sealing or lining is needed for trench sanitary landfills. The surface should be stabilized and the land shaped if the soil is to be used as a playground. Land shaping and an appropriate building design are needed for small commercial buildings. The potential is medium for shallow excavations if the side walls are shored.

Capability subclass IIIs.

12—Clarendon fine sandy loam. This somewhat poorly drained, nearly level soil occurs in wet areas along poorly defined and well defined drainageways in the flatwoods. Slopes are 0 to 2 percent. They are smooth to convex.

Typically, the surface layer is very dark grayish brown fine sandy loam about 8 inches thick. The subsurface layer is light yellowish brown fine sandy loam about 8 inches thick. The upper 5 inches of the subsoil is light yellowish brown sandy clay loam mottled with gray, red, yellow, and brown. Below this is 31 inches of sandy clay loam that has grayish, reddish, and brownish mottles. Below a depth of 52 inches the subsoil is gray light sandy clay loam. The lower part of the subsoil contains plinthite.

Included with this soil in mapping are small areas of Alapaha, Albany, Blanton, Foxworth, Dothan, Leefield, Pansey, Plummer, and Compass soils. Also included are small areas of similar soils where slopes are 2 to 5 percent and, in some mapped areas, a few small wet spots. The included soils make up less than 20 percent of any one mapped area.

The water table is between depths of 10 and 40 inches for 3 to 5 months in most years. The available water capacity is medium to a depth of about 26 inches and low below. Permeability is moderately rapid in the surface layer, moderate in the upper part of the subsoil, and moderately slow below. Internal drainage is moderately slow to slow; it is impeded by the shallow water table. Natural fertility and the organic matter content are moderate in the top 10 inches and low below 10 inches.

The natural vegetation is longleaf pine, pond pine, slash pine, and water tolerant hardwoods that include sweetgum and water oak. The understory is native grasses and shrubs, including waxmyrtle, inkberry, and pineland threeawn.

Limitations are moderate for cultivated crops because of wetness. Only crops that are tolerant of periodic wet conditions are suitable. Tile drains or open drainage ditches are needed for most crops. If well managed, such crops as corn and soybeans grow well. Occasionally during the growing or harvesting seasons, excess water damages the crops. The crop rotation should provide close growing cover crops at least half the time. The soil-improving cover crops and all crop residue should be left on the ground or plowed under. Good seedbed preparation, fertilizing, and liming are also important.

This soil is moderately well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, improved bahiagrasses, and clovers. The crops respond moderately well to fertilizer and lime. Grazing should be controlled so that plants remain vigorous, the ground cover good, and yields high.

If water control is adequate, the potential is high for loblolly pine, slash pine, and sweetgum. Loblolly pine, slash pine, American sycamore, yellow-poplar, and sweetgum are the most suitable for planting.

The potential is high for sanitary landfill, playgrounds, small commercial buildings, local roads and streets, and dwellings without basements. It is medium for septic tank absorption fields and shallow excavations. Water control is needed for all of these uses. In addition, larger absorption fields are needed for septic tanks.

Capability subclass IIw.

13—Compass loamy sand, 0 to 2 percent slopes. This moderately well drained, moderately slowly permeable, nearly level soil occurs as broad areas on uplands. It occurs throughout the county, generally in small areas. The lower part of the subsoil is saturated in winter and early in spring. Slopes are smooth.

Typically, the surface layer is dark gray loamy sand about 8 inches thick. The upper 8 inches of the subsurface layer is yellowish brown loamy sand, and the lower 6 inches is yellow sandy loam. The subsoil, in sequence from the top, is 11 inches of brownish yellow sandy loam, 7 inches of yellowish brown sandy clay loam that has few to common yellow, brown, and red mottles, and 17 inches of yellowish brown sandy clay loam that has common brown, yellow, and gray mottles and is more than 5 percent plinthite. The lower part of the subsoil, extending to a depth of 74 inches or more, is mottled gray, yellow, brown, and red sandy clay and clay.

Included with this soil in mapping are small areas of Albany, Clarendon, Dothan, Fuquay, and Leefield soils. Also included are soils that are similar to this Compass soil but are sandy clay loam throughout the subsoil and a few small areas where slopes are 2 to 5 percent. The included soils make up less than 15 percent of any one mapped area.

In most years, the water table is perched between depths of 30 and 40 inches for 2 to 4 months in winter and in spring. In some years, it is within a depth of 30 inches for a few days after heavy rainfall. Permeability is rapid in the surface and subsurface layers, moderate to moderately rapid in the upper part of the subsoil, and moderately slow in the lower part of the subsoil. Internal drainage is moderately slow. Surface runoff is slow. The organic matter content and the natural fertility are moderate in the surface layer but low below.

The natural vegetation is longleaf pine, slash pine, white oak, red oak, laurel oak, water oak, persimmon, and sweetgum. The understory is inkberry, waxmyrtle, blackberry, greenbrier, and pineland threeawn. A few small areas have been cleared and planted to peanuts, corn, soybeans, and improved pasture grasses.

Limitations are moderate for cultivated crops because of wetness. Unless this soil is drained, suitable crops are limited to those that tolerate slight wetness. If it is drained, such crops as corn and peanuts can be grown. The crop rotation should include close growing crops at least half the time. The soil-improving cover crops and

all crop residue should be left on the land or plowed under. Good seedbed preparation, fertilizer, and lime are needed for top yields.

This soil is well suited to pasture and hay crops. If well managed, such grasses as Coastal bermudagrass and improved bahiagrasses grow well. Several legumes are also well suited. Fertilizer, lime, and controlled grazing are needed for top yields.

This soil has high potential for loblolly pine, longleaf pine, slash pine, and sweetgum. Slash and loblolly pine are the most suitable for planting.

The potential is very high for small commercial buildings, local roads and streets, and buildings without basements. No special measures are needed. The potential is high for septic tank absorption fields, trench sanitary landfill, playgrounds, and shallow excavations. Water control is needed for all but playgrounds. In addition, mounding is needed for septic tanks. The surface should be stabilized if the soil is to be used as a playground.

Capability subclass IIw.

14—Compass loamy sand, 2 to 5 percent slopes. This moderately well drained, moderately slowly permeable, gently sloping soil occurs as broad areas on uplands. The lower part of the subsoil is saturated in winter and early in spring. Slopes are smooth.

Typically, the surface layer is dark gray loamy sand about 6 inches thick. The upper 7 inches of the subsurface layer is yellowish brown loamy sand, and the lower 6 inches is yellow sandy loam. The subsoil, extending to a depth of more than 60 inches, is 9 inches of brownish yellow sandy loam and about 9 inches of a yellowish brown sandy clay loam that has few to common yellow, brown, and red mottles. Below this is yellowish brown sandy clay loam that has common brown, yellow, and gray mottles and is more than 5 percent plinthite. The lower part is mottled gray, yellow, brown, and red sandy clay or clay.

Included with this soil in mapping are small areas of Albany, Clarendon, Dothan, Fuquay, and Leefield soils. Also included are areas of a soil that is similar to this Compass soil but is sandy clay loam throughout the subsoil and a few small areas where slopes are 0 to 2 percent or 5 to 8 percent. The included soils make up less than 15 percent of any one mapped area.

In most years, the water table is between depths of 30 and 40 inches for 2 to 4 months in winter and in spring. In some years it is within a depth of 30 inches for a few days after heavy rainfall. Permeability is rapid in the surface and subsurface layers, moderate to moderately rapid in the upper part of the subsoil, and moderately slow in the lower part of the subsoil. Internal drainage is moderately slow, and surface runoff is slow. The organic matter content and natural fertility are moderate in the surface layer but low below.

The natural fertility is longleaf and slash pine, white oak, red oak, water oak, persimmon, and sweetgum. The understory is inkberry, waxmyrtle, dewberry, greenbrier, blackberry, and pineland threeawn. A few small areas have been cleared and planted to peanuts, corn, soybeans, and improved pasture grasses.

This soil has moderate limitations for cultivated crops because of the hazards of erosion and wetness. Suitable crops are limited to those that tolerate slight wetness. If the soil is drained, such crops as corn and peanuts are suited. Row crops should be planted on the contour in rotation with cover crops. The cover crops should remain on the soil at least half the time. The soil-building cover crops and all crop residue should be left or plowed under. Good seedbed preparation, fertilizer, and lime are needed for top yields.

This soil is moderately well suited to pasture and hay crops. If well managed, such grasses as Coastal bermudagrass and improved bahiagrasses grow well. Several legumes are also well suited. Fertilizer, lime, and controlled grazing are needed for top yields.

This soil has high potential for loblolly pine, longleaf pine, slash pine, and sweetgum. Slash and loblolly pine are the most suitable for planting.

The potential is very high for small commercial buildings, local roads and streets, and buildings without basements. No special measures are needed. The potential is high for septic tank absorption fields, trench sanitary landfill, and shallow excavations. Water control is needed for all of these uses. In addition, mounding is needed for septic tanks. The potential is high for playgrounds if the surface is stabilized.

Capability subclass IIe.

15—Compass loamy sand, 5 to 8 percent slopes. This moderately well drained, moderately slowly permeable, sloping soil is on uplands and hillsides of the Coastal Plain. It occurs throughout the county. The lower part of the subsoil is saturated in winter and early in spring. Slopes are smooth to convex.

Typically, the surface layer is dark gray loamy sand about 5 inches thick. The upper 6 inches of the subsurface layer is yellowish brown loamy sand, and the lower 5 inches is yellow sandy loam. The subsoil, extending to a depth of more than 60 inches, is about 8 inches of brownish yellow sandy loam and 8 inches of yellowish brown sandy clay loam that has few to common yellow, brown, and red mottles. Below this is yellowish brown sandy clay loam that has common brown, yellow, and gray mottles and is more than 5 percent plinthite. The lower part is mottled gray, yellow, brown, and red sandy clay.

Included with this soil in mapping are small areas of Albany, Clarendon, Dothan, Fuquay, and Leefield soils. Also included are areas of a soil that is similar to this Compass soil but is sandy clay loam throughout the subsoil and a few small areas where slopes are 2 to 5 percent. The included soils make up less than 15 percent of any one mapped area.

In most years, the water table is perched between depths of 30 and 40 inches for 2 to 4 months in winter and in spring. In some years, it is within a depth of 30 inches for a few days after heavy rainfall. Permeability is rapid in the surface and subsurface layers, moderate to moderately rapid in the upper part of the subsoil, and moderately slow in the lower part of the subsoil. Internal drainage is moderately slow, and surface runoff is medium. The organic matter content and natural fertility are moderate in the surface layer but low below.

The natural vegetation is longleaf and slash pine, white oak, red oak, laurel oak, water oak, persimmon, and sweetgum. The understory is inkberry, waxmyrtle, dewberry, greenbrier, blackberry, and pineland threeawn. A few small areas have been cleared and planted to peanuts, corn, soybeans, and improved pasture grasses.

Limitations are severe for cultivated crops because of the hazards of erosion and wetness. The soil is poorly suited to cultivated crops. If excess water can be removed and the soil well managed, it is moderately suitable for most crops commonly grown in the county. Intensive erosion control and water control are needed. Row crops should be cultivated on the contour in alternate strips with close growing crops. The crop rotation should include close growing crops at least two-thirds of the time. The soil-improving cover crops and all crop residue should be left on the soil or plowed under. Drains are needed to intercept hillside seepage water. Drainage and bedding are needed for crops that are damaged by wetness.

This soil is moderately well suited to pasture and hay crops, for example, Coastal bermudagrass and bahiagrasses. Response to fertilizer and lime is only moderate. Controlled grazing is needed to maintain vigorous plants for maximum yields and a good ground cover.

This soil has high potential for growing loblolly pine, longleaf pine, slash pine, and sweetgum. Loblolly and slash pine are the most suitable for planting.

The potential is very high for local roads and streets and buildings without basements. It is high for septic tank absorption fields, trench sanitary landfill, playgrounds, and small commercial buildings. Water control is needed for septic tank absorption fields and trench sanitary landfill. In addition, the absorption field should be laid out parallel to the slope. For playgrounds, land shaping and surface stabilization are needed. Small commercial buildings should be designed to fit the slope. The potential is medium for shallow excavations. Water control and correct placement of the excavation on the slope are needed.

Capability subclass IIIe.

16—Dorovan-Pamlico association. This map unit consists of nearly level, very poorly drained Dorovan and Pamlico soils. These soils occur in a regular and repeating pattern in depressions in the uplands and flatwoods. The Dorovan soil is generally in the center of the areas, where organic material is thicker, and the Pamlico soil is at the outer edges or rims. Areas are generally round or oblong. They range from about 10 to 300 acres. Individual areas of each soil range from about 10 to 100 acres. They are large enough to be mapped separately. Considering the predicted use, however, and the fact that examining the soils in detail is extremely difficult because of dense vegetation and wetness, they are mapped as one unit.

The composition of this unit is more variable than that of most other units in the county, but it has been controlled well enough for the expected use of the soils.

The Dorovan soil makes up about 45 percent of the unit. Typically, it is black muck to a depth of 51 inches or more.

In most years, the Dorovan soil is covered with water for 6 to 12 months. The water table is usually within a depth of 10 inches. Only during the driest seasons, usually late in fall, is the water table lower. At such times it can recede briefly to depths of 40 inches or more. Permeability is very slow. The available water capacity is very high.

The Pamlico soil makes up about 35 percent of the unit. Typically, it is black muck about 36 inches thick over very dark grayish brown sand that extends to a depth of 60 inches or more.

In most years, the Pamlico soil is covered with water for 6 to 9 months. The water table is usually within a depth of 10 inches. Only during the driest seasons, usually late in fall, is the water table lower. At such times it can recede briefly to depths of 40 inches or more. Permeability is moderate. The available water capacity is very high.

Minor soils make up about 20 percent of the unit. Alapaha, Pansey, Pantego, Plummer, and Rutlege soils, in about equal proportion, are the most extensive. These soils generally occur near the edges of the mapped areas.

The natural vegetation is chiefly such water-tolerant hardwoods as water oak, sweetbay, blackgum, sweetgum, red maple, black willow alder, and cypress. Around the edges of the areas, the vegetation includes pond, shortleaf, and slash pine. Almost all areas are still under natural vegetation. They provide habitat for wildlife.

These soils have very severe limitations for cultivated crops because of wetness. If water can be controlled, they are suited to some new crops, for example, sunflowers and potatoes, and to most vegetable crops. A well designed and well maintained water control system is needed. It should remove excess water during the growing season and keep the soils saturated at all other times. Phosphates, potash, and minor elements are needed. Water-tolerant cover crops are needed unless the soil is row cropped. All crop residue and cover crops should be plowed under.

If water is controlled, most improved grasses and clovers grow well on these soils. The water control system

should maintain the water table near the surface to prevent excessive oxidation of the organic horizons. Fertilizer high in potash, phosphorus, and minor elements is needed. Grazing should be controlled for maximum yields.

The potential is low for woodland. Seedling mortality and equipment limitations are the main management concerns. On the Dorovan soil, baldcypress is the most suitable for planting. On the Pamlico soil, slash and loblolly pine are most suitable.

The potential is very low for septic tank absorption fields, trench sanitary landfills, playgrounds, local roads and streets, dwellings without basements, and shallow excavations. The potential is low for small commercial buildings. Water control is needed for all of these uses. In addition, the organic material should be excavated and backfilled with suitable soil material. Mounding is needed for septic tank absorption fields. Special equipment is needed for shallow excavations.

Capability subclass IVw.

17—Dothan loamy sand, 2 to 5 percent slopes. This is a well drained, gently sloping upland soil. Areas occur in all but the extreme southwestern part of the county. Slopes are smooth to concave.

Typically, the surface layer is dark grayish brown loamy sand about 5 inches thick. The upper 29 inches of the subsoil is yellowish brown sandy clay loam. The next 20 inches is yellowish brown sandy clay loam mottled with brown and red. The lower 22 inches is yellowish brown sandy clay loam mottled with brown, red, yellow, and gray. The lower part of the subsoil contains plinthite.

Included with this soil in mapping are small areas of Esto, Faceville, Fuquay, Chipola, Orangeburg, Compass, Tifton, and Wicksburg soils and small areas of soils that are similar to this Dothan soil but have slopes of 0 to 2 percent or 5 to 8 percent. Also included are small areas of a soil that is similar to this Dothan soil but it is moderately well drained. The included soils make up less than 15 percent of any one mapped area.

The water table is usually below 6 feet, but after heavy rainfall it is commonly perched above the lower part of the subsoil for 1 to 6 days. The available water capacity is medium. Permeability is moderately slow in the lower part of the subsoil. Runoff is moderate. Natural fertility and the organic matter content are moderately low.

The natural vegetation is longleaf and slash pine and mixed hardwoods, including white oak, red oak, live oak, laurel oak, sweetgum, hickory, dogwood, and persimmon. The understory is native grasses and shrubs, including huckleberry, briers, and pineland threeawn.

Limitations are moderate for cultivated crops because of the hazard of erosion. The variety of suitable crops is somewhat limited by occasional wetness. Such crops as corn and peanuts are suited. Measures to control erosion are needed. Such measures include terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least half the time. The crop residue and the soil-improving cover crops should be left on the ground or plowed under. For such crops as tobacco, which are damaged by the slight wetness, tile drains are needed. For maximum yields, good seedbed preparation, fertilization, and liming are needed.

This soil is well suited to pasture and hay crops, for example, improved pasture plants such as clovers, tall fescue, Coastal bermudagrass, and improved bahiagrasses. Yields are good if the crop is well managed. Fertilization, liming, and controlled grazing are needed to maintain vigorous plants and a good ground cover.

The potential is high for longleaf, loblolly, and slash pine. Loblolly and slash pine are the most suitable for planting.

The potential is very high for trench sanitary landfill, local roads and streets, buildings without basements, and shallow excavations. No special measures are needed. The potential is high for septic tank absorption fields, but a larger field is needed. If the land is shaped and the surface stabilized, the potential is high for playgrounds. If the land is shaped, the potential is high for small commercial buildings.

Capability subclass IIe.

18—Dothan loamy sand, 5 to 8 percent slopes. This well drained, sloping, upland soil is on hillsides along drainageways and around depressions or sinks. Slopes are commonly long and smooth. Some are convex.

Typically, the surface layer is dark grayish brown loamy sand about 5 inches thick. The subsurface layer is brown or dark brown loamy sand about 4 inches thick. The upper 20 inches of the subsoil is yellowish brown sandy clay loam. The lower part of the subsoil is yellowish brown sandy clay loam mottled with brown, yellow, red, and gray. It is more than 5 percent plinthite by volume.

Included with this soil in mapping are small areas of Esto, Faceville, Fuquay, Chipola, Orangeburg, Compass, and Wicksburg soils and small areas of soils that have similar properties but have slopes of 2 to 5 percent or 8 to 12 percent. Also included are small areas where erosion has removed the original surface soil. The included soils make up less than 15 percent of any one mapped area.

The water table is usually below 6 feet, but after heavy rainfall it is commonly perched above the lower subsoil for 1 to 4 days. The available water capacity is medium. Permeability is moderately slow in the lower part of the subsoil. Surface runoff is moderately rapid. Natural fertility and the organic matter content are moderately low.

The natural vegetation is longleaf pine, slash pine, and mixed hardwoods, including white oak, red oak, black oak, laurel oak, live oak, water oak, dogwood, hickory, sweetgum, and persimmon. The understory is native

grasses and shrubs, including huckleberry, briers, and pineland threeawn.

Limitations are severe for cultivated crops because of the erosion hazard. The variety of suitable crops is somewhat limited by occasional wetness. Crops such as corn, soybeans, and peanuts are only moderately well suited. Intensive erosion control measures are needed. Such measures include carefully designed terraces with stabilized outlets, contour cultivation of row crops in alternate strips with close growing crops, and a crop rotation that includes close growing crops at least two-thirds of the time. Soil-improving cover crops and all crop residue should be left on the land or plowed under. Tile or open drains are needed to intercept seepage water from higher areas, and rows should be planted on beds. For maximum yields, good seedbed preparation, fertilization, and liming are needed.

This soil is only moderately well suited to pasture, for example, Coastal bermudagrass and improved bahiagrass. Yields are only moderate, even if the soil is fertilized and limed. Controlled grazing is needed to maintain vigorous plants, maximum yields, and good soil cover.

The potential is high for longleaf, loblolly, and slash pine. Limitations are slight. Loblolly and slash pine are the most suitable for planting.

The potential is very high for local roads and streets, buildings without basements, and shallow excavations. No special corrective measures are needed. The potential is high for septic tank absorption fields, trench sanitary landfill, playgrounds, and small commercial buildings. A larger absorption field is needed for septic tanks. For trench sanitary landfill, water control is needed. For playgrounds, the land should be shaped and the surface stabilized. For small commercial buildings, land shaping and an appropriate building design are needed.

Capability subclass IIIe.

19—Dothan loamy sand, 8 to 12 percent slopes. This well drained, strongly sloping soil occurs on uplands adjacent to drainageways or depressions and on hillsides. Slopes are smooth.

Typically, the surface layer is dark grayish brown or grayish brown loamy sand about 5 inches thick. The subsurface layer is yellowish brown sandy loam about 4 inches thick. The subsoil is yellowish brown sandy clay loam more than 50 inches thick. The lower part has common distinct mottles of brown, yellow, red, and gray. It contains plinthite.

Included with this soil in mapping are small areas of Esto, Faceville, Chipola, Orangeburg, Compass, and Wicksburg soils and areas where slopes are 12 to 17 percent. Also included are small eroded areas where the clayey subsoil is exposed at the surface. The included soils make up less than 15 percent of any one mapped area.

The water table is usually below 6 feet, but it is perched above the lower part of the subsoil for 1 to 4 days after heavy rainfall. Usually this perched water table is 40 to 60 inches below the surface for a brief period. The available water capacity is moderate.

Permeability is moderately slow in the lower part of the subsoil. Natural fertility and the organic content are moderately low throughout. Surface runoff is rapid.

The natural vegetation is longleaf pine, slash pine, and mixed hardwoods, including various oak species, sweetgum, hickory, and persimmon. The understory is native grasses and shrubs, including huckleberry, briers, and pineland threeawn.

Limitations are very severe for cultivated crops because of the erosion hazard. The variety of suitable crops is limited by occasional wetness. Intensive erosion control measures are needed. Such measures include contour cultivation of row crops in alternate strips with close growing crops and a crop rotation that includes close growing crops at least two-thirds of the time. These soils are too steep for terracing. All crop residue should be left on the land or plowed under. Tile drains or open drains are needed to intercept seepage from higher areas. Rows should be planted on beds. For best yields, good seedbed preparation, fertilization, and liming are needed.

The soil is only moderately well suited to pasture, for example, Coastal bermudagrass and improved bahiagrasses. Yields are only moderate, even if the soil is fertilized and limed. Controlled grazing is needed to maintain vigorous plants for maximum yields.

The potential is high for longleaf, loblolly, and slash pine. Loblolly and slash pine are the most suitable for planting.

The potential is very high for local roads and streets. It is high for trench sanitary landfill and shallow excavations. Water control is needed. In addition, land shaping is needed for trench sanitary landfill. The potential is high for low commercial buildings and buildings without basements. An appropriate building design is needed. For small commercial buildings, land shaping is also needed. The potential is medium for playgrounds if the land is shaped.

Capability subclass IVe.

20—Duplin fine sandy loam, 0 to 2 percent slopes. This moderately well drained, nearly level soil occurs as broad flat areas adjacent to the flood plains of large streams. Slopes are smooth to convex.

Typically, the surface layer is very dark gray fine sandy loam about 9 inches thick. The upper 8 inches of the subsoil is light yellowish brown mottles. The next 29 inches is light yellowish brown and yellowish brown clay that has common to many medium distinct yellow, brown, red, and gray mottles. Below 46 inches and extending to 64 inches or more is mottled gray, red, brown, and yellow clay. The number of gray mottles increases with increasing depth, whereas the number of red mottles decreases with depth.

Included with this soil in mapping are small areas of Alapaha, Clarendon, Bethera, Hornsville, and Grady soils and small areas of soils that are similar to this Duplin soil but have slopes of 2 to 5 percent. Also included are a few small areas of soils that have similar texture but have gray mottles below a depth of 30 inches and some areas where the gray mottles are in the upper 10 inches of the subsoil. The included soils make up less than 15 percent of any one mapped area.

The water table is between depths of 24 and 40 inches for 1 to 4 months during most years. In slightly depressed areas, the water table is within a depth of 10 to 30 inches for 2 to 4 months during extended wet seasons. The available water capacity is medium. Permeability is moderately rapid in the surface layer and moderately slow in the subsoil. Internal drainage is slow. Natural fertility and the organic matter content are moderate in the surface layer.

The natural vegetation is longleaf pine, loblolly pine, slash pine, sweetgum, persimmon, wild hickory, several species of oak, and dogwood. The understory is waxmyrtle, inkberry, native shrubs, and pineland threeawn.

Limitations are moderate for cultivated crops because of wetness. Carefully designed tile or open drains are needed, and a water control system should be designed to remove excess water rapidly after heavy rains. The crop rotation should include a cover crop at least half the time. Soil-improving cover crops and all crop residue should be left on the land or plowed under. Good seedbed preparation, fertilization, and liming are also important.

These soils are well suited to pasture and hay crops. Tall fescue, clovers, Coastal bermudagrass, and bahiagrasses are well suited. For the best yields, regular additions of fertilizer and lime are needed. Grazing should be controlled to maintain vigorous plants for top yields.

The potential is high for loblolly and slash pine, blackgum, yellow-poplar, and sweetgum. Loblolly and slash pine, yellow-poplar, American sycamore, and sweetgum are the most suitable for planting.

The potential is high for trench sanitary landfill, playgrounds, and shallow excavations. Water control is needed for all of these uses. The potential is medium for septic tank absorption fields, small commercial buildings, and buildings without basements. Water control and larger absorption fields are needed for septic tanks. Water control and larger footings and foundations are needed for small commercial buildings and buildings without basements. The potential is low for local roads and streets, even if the structural strength is increased.

Capability subclass IIw.

21—Duplin fine sandy loam, 2 to 5 percent slopes. This moderately well drained, gently sloping soil occurs as broad areas adjacent to the flood plains along large streams. Slopes are smooth to convex.

Typically, the surface layer is dark gray fine sandy loam about 8 inches thick. The subsurface layer, where present, is pale brown sandy loam about 4 inches thick. The upper 7 inches of the subsoil is light yellowish brown sandy clay loam and has few to common yellowish red and yellowish brown mottles. The next 26 inches of the subsoil is yellowish brown clay and has common to many medium distinct yellow, brown, red, and gray mottles. The subsoil to a depth of 62 inches or more is mottled gray and yellowish brown sandy clay. The number of gray mottles increases with increasing depth, whereas the number of red mottles decreases with depth.

Included with this soil in mapping are small areas of Alapaha, Clarendon, Bethera, and Grady soils. Also included are small areas of a soil that is similar to this Duplin soil but has gray mottles at a greater depth. The included soils make up less than 15 percent of any one mapped area.

The water table is between 30 and 40 inches for 1 to 3 months during most years. The available water capacity is medium. Permeability is moderately rapid in the surface layer and moderately slow in the subsoil. Internal drainage is slow. Natural fertility and the organic matter content are moderate in the surface layer.

The natural vegetation is longleaf pine, loblolly pine, slash pine, sweetgum, persimmon, wild hickory, and dogwood and an understory of southern bayberry, inkberry, native shrubs, and pineland threeawn.

Limitations are moderate for cultivated crops because of the erosion hazard. If the soil is well managed, it is well suited to a variety of crops, for example, such crops as corn and soybeans. Moderate erosion control measures are needed, including a system of well designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least half the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For best yields, good seedbed preparation, fertilization, and liming are needed.

The soil is well suited to pasture and hay crops. Such pasture grasses as tall fescue, Coastal bermudagrass, and the improved bahiagrasses are well suited. Clovers and other legumes are also suitable. If the crop is well managed, yields are good. Fertilizing and liming are needed, and grazing should be controlled to maintain vigorous plants for highest yields and good soil cover.

The potential is high for loblolly and slash pine, blackgum, yellow-poplar, and sweetgum. Loblolly and slash pine, yellow-poplar, American sycamore, and sweetgum are the most suitable for planting.

If water is controlled, the potential is high for trench sanitary landfill, playgrounds, and shallow excavations and medium for septic tank absorption fields, small commercial buildings, and dwellings without basements. In addition, larger absorption fields are needed for septic tanks, and larger footings and foundations are needed

for small commercial buildings and buildings without basements. The potential is low for local roads and streets, even if the structural strength is increased.

Capability subclass IIe.

22—Esto loamy sand, 2 to 5 percent slopes. This gently sloping, slowly permeable soil is deep and well drained. It occurs as small areas of 5 to 20 acres on uplands, mostly on small knolls and ridgetops. Slopes are smooth and convex.

Typically, the surface layer is pale brown loamy sand about 3 inches thick. The subsurface layer is dark brown loamy sand 9 inches thick. The subsoil is sandy clay and clay to a depth of more than 80 inches. The upper 6 inches is reddish yellow, the next 18 inches is reddish yellow, and the lower part is mottled red, yellow, brown, and gray.

Included with this soil in mapping are small areas of Dothan, Duplin, Faceville, Fuquay, Chipola, Orangeburg, Troup, and Wicksburg soils. Also included are small areas of similar but eroded soils where the surface layer is a mixture of the original material and material from the subsoil. In a few areas are similar soils that have slopes of 0 to 2 percent or 5 to 8 percent. The included soils make up less than 20 percent of any one mapped area.

The water table is below a depth of 6 feet at all times. Permeability is slow. Surface runoff is moderate. The available water capacity is medium. Natural fertility is low, but the response to fertilizer is good.

The natural vegetation is longleaf, loblolly, and slash pine; various species of oak, including white, black, red, laurel, live, and water oak; and hickory and dogwood. The understory is pineland threeawn, American beautyberry, smilax, muscadine grape, southern blackberry, briers, and native shrubs.

Limitations are severe for cultivated crops because of the erosion hazard. Crops such as corn, soybeans, and peanuts are only fairly well suited. Intensive erosion control measures are needed, including contour cultivation of row crops in alternate strips with close growing crops and a crop rotation that includes close growing crops at least two-thirds of the time. All crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and liming are needed.

The soil is moderately well suited to pasture and hay crops. Cool-season plants such as tall fescue and clovers are poorly suited. Coastal bermudagrass and improved bahiagrasses grow only moderately well, even if they are fertilized and limed. Controlled grazing is needed to maintain vigorous plants for maximum yields and good ground cover.

This soil has moderately high potential for slash, longleaf, and loblolly pine. Slash and loblolly pine are the most suitable for planting.

The potential is very high for trench sanitary landfill. It is high for dwellings without basements if larger footings and foundations are used and high for shallow excavations if special equipment is used. The potential is medium for septic tank absorption fields, but a larger field is needed. It is medium for playgrounds if the land is shaped, medium for small commercial buildings if larger footings and foundations are used, and medium for local roads and streets if structural strength is increased.

Capability subclass IIIe.

23—Esto loamy sand, 5 to 8 percent slopes. This sloping soil occurs on uplands. Areas are generally 5 to 20 acres. Slopes are short to medium.

Typically, the surface layer is loamy sand about 8 inches thick. The upper 2 inches is brown, and the lower 6 inches is dark brown. The underlying layers are sandy clay and clay to a depth of 80 inches or more. The upper 6 inches is reddish yellow, and the layers below are reddish brown. The number of gray mottles increases with increasing depth.

Included with this soil in mapping are small areas of Chipola, Dothan, Faceville, Fuquay, Hornsville, Orangeburg, Troup, and Wicksburg soils. Also included are areas of soils similar to this Esto soil where erosion has exposed the Bt horizon and areas where slopes are 2 to 5 percent or 8 to 12 percent. The included soils make up less than 20 percent of the unit.

The water table is below 6 feet at all times. Permeability is slow throughout the subsoil. Surface runoff is moderate. The available water capacity is moderately low. Natural fertility is low, but the soil responds well to fertilizer.

The natural vegetation is longleaf, loblolly, and slash pine, various species of oak including white, black, red, laurel, live, and water oak, and hickory and dogwood. The understory is pineland threeawn, briers, and native shrubs.

Limitations are very severe for cultivated crops and improved pasture. Slow permeability, slope, and the clayey subsoil are the dominant limiting factors. If the soil is to be cultivated, complex erosion control practices are needed.

This soil has moderately high potential for slash, longleaf, and loblolly pine. Loblolly and slash pine are the most suitable for planting.

The potential is high for trench sanitary landfill, dwellings without basements, and shallow excavations. Land shaping is needed for trench sanitary landfill, larger footings and foundations for dwellings without basements, and special equipment for shallow excavations. The potential is medium for septic tank absorption fields, playgrounds, and local roads and streets. Larger absorption fields are needed for septic tanks. Land shaping is needed for playgrounds. The structural strength should be increased for local roads and streets.

Capability subclass IVe.

24—Faceville loamy fine sand, 2 to 5 percent slopes. This well drained, gently sloping soil occurs on upland ridges. Slopes are smooth to convex.

Typically, the surface layer is brown loamy fine sand about 5 inches thick. The upper 15 inches of the subsoil is red sandy clay. Next is 10 inches of red sandy clay mottled with yellow and brown. The lower 31 inches of the subsoil is mottled red, yellow, brown, and white sandy clay and clay. Below the subsoil is mottled fine sandy loam.

Included with this soil in mapping are small areas of similar soils where slopes are 5 to 8 percent. Also included are small areas of Orangeburg, Greenville, Esto, Dothan, Fuquay, Chipola, and Red Bay soils. The included soils make up less than 20 percent of any one mapped area.

Permeability is moderate. Surface runoff is high. The available water capacity is medium. Natural fertility and the organic matter are moderately low. Depth to the seasonal high water table is more than 10 feet.

The natural vegetation is longleaf, loblolly, and slash pine, hickory, persimmon, dogwood, white oak, red oak, black oak, live oak, laurel oak, and other oak species. The understory is briers, pineland threeawn, and native shrubs. Most areas of this soil are cutover woodland. Some have been cleared and replanted to slash pine. Many small areas in larger fields of other soils are cultivated. A few areas are planted to improved pasture grasses.

Limitations are moderate for cultivated crops because of the erosion hazard. A wide variety of cultivated crops is well suited. If well managed, such crops as corn and soybeans grow well. Moderate erosion control measures are needed. These measures include a system of well designed terraces having stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least half the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and liming are needed.

The soil is well suited to pasture and hay crops. Grasses such as tall fescue, Coastal bermudagrass, and the improved bahiagrasses are well suited. Clovers and other legumes are suited and grow well if well managed. Fertilization, liming, and controlled grazing are needed to maintain vigorous plants for highest yields and good soil cover.

This soil has moderately high potential for slash, loblolly, and longleaf pine. Slash and loblolly pine are the most suitable for planting.

The potential is very high for trench sanitary landfill, buildings without basements, and shallow excavations. No special corrective measures are needed. The potential is high for playgrounds if the land is shaped, high for small commercial buildings if larger footings and foundations are used, and high for local roads and streets if structural strength is increased.

Capability subclass IIe.

25—Faceville loamy fine sand, 5 to 8 percent slopes. This well drained, sloping soil occurs on the uplands. Slopes are smooth to convex.

Typically, the surface layer is dark yellowish brown loamy fine sand about 3 inches thick. In some areas erosion has removed most or all of the original surface layer. The upper part of the subsoil is about 16 inches of red or yellowish red, unmottled sandy clay or clay. The lower part is mottled red, yellow, brown, and white clay or sandy clay.

Included with this soil in mapping are small areas where erosion has completely removed the original surface layer. Also included are small areas of Dothan, Esto, Greenville, Chipola, Oktibbeha, Orangeburg, and Tifton soils and some small areas of soils that have similar properties but have slopes of 2 to 5 percent or 8 to 12 percent. The included soils make up less than 20 percent of any one mapped area.

Permeability is moderate. Surface runoff is high, which causes a high risk of erosion. The available water capacity is medium. Natural fertility and the organic matter content are moderately low. The seasonal high water table is usually at a depth of more than 10 feet.

The natural vegetation is longleaf, loblolly, and slash pine, hickory, dogwood, and various species of oak, including white, black, red, live, and laurel oak. The understory is pineland threeawn, briers, and native shrubs. Most areas of this soil are wooded. Most of the merchantable timber, however, has been harvested. A few areas are cultivated or in improved pasture.

Limitations are moderate for cultivated crops because of the erosion hazard. A wide variety of cultivated crops is well suited. If well managed, such crops as corn and soybeans grow well. Intensive erosion control measures are needed. These measures include a system of well designed terraces having stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least two-thirds of the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and liming are needed.

The soil is well suited to pasture and hay crops. Grasses such as tall fescue, Coastal bermudagrass, and improved bahiagrasses are well suited. Clovers and other legumes are suited and grow well if well managed. Fertilization, liming, and controlled grazing are needed to maintain vigorous plants for highest yields and good soil cover.

This soil has moderately high potential for slash, loblolly, and longleaf pine. Loblolly and slash pine are the most suitable for planting.

The potential is very high for trench sanitary landfill and dwellings without basements. No special corrective measures are needed. The potential is high for playgrounds if the land is shaped, high for local roads and streets if the structural strength is increased, and high for shallow excavations if the excavation is placed properly on the slope. The potential is medium for septic tank absorption fields, but larger absorption fields are needed. It is medium for small commercial buildings, but land shaping appropriate to the building design and larger footings and foundations are needed.

Capability subclass IIIe.

26—Faceville loamy fine sand, 8 to 12 percent slopes. This well drained, strongly sloping soil occurs on hillsides of the uplands. Slopes are generally smooth, but in some small areas they are steep or abrupt.

Typically, the surface layer is dark grayish brown loamy fine sand 2 to 5 inches thick. The upper 12 to 16 inches of the subsoil is red or yellowish red, unmottled sandy clay or clay. The lower part is mottled red, yellow, brown, and white sandy clay or clay.

Included with this soil in mapping are small areas of Dothan, Esto, Greenville, Chipola, Oktibbeha, Orangeburg, Tifton, and Troup soils. Also included are small areas of similar soils where the original surface layer has been completely removed by erosion and small areas where slopes are 5 to 8 percent or 12 to 17 percent. The included soils make up less than 25 percent of any one mapped area.

This soil has moderate permeability. Surface runoff is very rapid. The hazard of erosion is very high. The available water capacity is medium. Inherent fertility and the organic matter content are low.

The natural vegetation is longleaf, loblolly, and slash pine, hickory, dogwood, and various species of oak, including white, black, red, post, and laurel oak. The understory is pineland threeawn, briers, and native shrubs. Most areas of this soil are cutover woodland.

The potential is moderately high for slash, longleaf, and loblolly pine. Slash and loblolly pine are the most suitable for planting.

Limitations are very severe for cultivated crops because of the erosion hazard. Slopes are too steep to be effectively terraced. The only practical erosion control measure is an adequate plant cover. If row crops are grown, they should be planted in narrow strips on the contour with alternating wider strips of close growing plants. A crop rotation should include close growing vegetation at least three-fourths of the time. All crop residue should be left on the soil. For both row crops and close growing crops, lime and fertilizer are needed for top yields.

The soil is moderately well suited to improved pasture, for example, tall fescue, Coastal bermudagrass, and improved bahiagrasses. Fertilization, liming, and controlled grazing are needed for best yields and to insure an adequate plant cover for erosion control.

The potential is high for trench sanitary landfill, local roads and streets, dwellings without basements, and shallow excavations. Trench sanitary landfill should be placed correctly on the slope. For local roads and streets, increased structural strength is needed. Dwellings without basements should be designed to accommodate the slopes. Land shaping and correct placement on the slope are needed for shallow excavations. The potential is medium for septic tank absorption fields, playgrounds, and small buildings. Septic tank absorption fields should be placed parallel to the slope, and a larger field is needed. Land shaping is needed for playgrounds and small commercial buildings. In addition, an appropriate building design and larger foundations are needed for small commercial buildings.

Capability subclass IVe.

27—Faceville-Esto complex, 5 to 15 percent slopes, severely eroded. This map unit is made up of small to large areas of severely eroded, sloping to moderately steep, well drained Faceville and Esto soils. Areas range from about 5 to 100 acres. They occur dominantly on hillsides along drainageways. Areas of the two soils were so intermixed that they could not be shown separately at the scale selected for mapping.

The Faceville soil makes up about 40 to 50 percent of the unit. In most areas, erosion has removed the original dark brown loamy fine sand surface layer and exposed the yellowish red sandy clay loam subsoil. The next 24 inches of the subsoil is red sandy clay mottled with yellow, brown, gray, and red. Below this, the subsoil is highly mottled gray, red, yellow, and brown sandy clay.

The Faceville soil is well drained and moderately permeable. Surface runoff is rapid. The available water capacity is medium. Natural fertility and the organic matter content are low. This soil does not have a water table within 10 feet of the surface.

The Esto soil makes up about 30 to 40 percent of the unit. Erosion has removed the original surface layer of grayish brown loamy sand. The present surface layer is 6 inches of the brown sandy clay loam subsoil material. The next 18 inches is yellowish red sandy clay that has common mottles of yellow, brown, and gray. The lower part of the subsoil, extending to a depth of 60 inches or more, is reticulately mottled red, yellow, gray, and brown sandy clay.

The Esto soil is well drained and has slow permeability. Surface runoff is rapid. The natural fertility and the organic matter content are low. The available water capacity is medium. This soil does not have a water table within 6 feet of the surface.

Minor soils make up about 10 to 20 percent of the unit. Most of the minor soils have a loamy texture but are otherwise similar to the Faceville or the Esto soil. Small areas of Dothan and Orangeburg soils occur at the

top or bottom of slopes. Small areas of Blanton, Bonifay, Chipola, Fuquay, and Troup soils are also at the top of many slopes. A few mapped areas include small areas of Albany, Leefield, or Compass soils at the base of slopes adjacent to drainageways.

The natural vegetation is slash and longleaf pine, white oak, red oak, laurel oak, live oak, post oak, hickory, dogwood, sweetgum, and persimmon. The understory is smilax, greenbrier, southern dewberry, huckleberry, poison ivy, and pineland threeawn. Most areas of this unit are cutover woodland or have been planted to slash pine.

These soils are not suitable for cultivated crops because they are too steep and too easily eroded. A permanent plant cover is essential.

The soils are poorly suited to pasture and hay crops. If well managed, such grasses as Coastal bermudagrass and bahiagrass grow moderately well, but yields are low. The need for a dense plant cover on the soil restricts grazing and limits the amount of hay that can be harvested.

These soils have moderately high potential for slash, longleaf, and loblolly pine. Loblolly and slash pine are the most suitable for planting.

The potential is high for trench sanitary landfill, local roads and streets, dwellings without basements, and shallow excavations. Structural strength should be increased for local roads and streets. Sanitary landfills, dwellings without basements, and shallow excavations should be placed correctly on the slope. The potential is medium for septic tank absorption fields, playgrounds, and small commercial buildings. Larger septic tank absorption fields are needed. They should be installed parallel with the slope. Land shaping is needed for playgrounds. Land shaping, appropriate building design, and larger footings and foundations are needed for small commercial buildings.

Capability subclass IVe.

28—Foxworth sand, 0 to 5 percent slopes. This moderately well drained, nearly level to gently sloping soil occurs in intermediate positions between the high upland soils and the lower lying wet flatwoods. It occurs as small areas throughout the county. Slopes are smooth to convex.

Typically, the surface layer is grayish brown and brown sand about 10 inches thick. The underlying layers are sand to a depth of 80 inches or more. The upper 30 inches is light yellowish brown, the next 12 inches is very pale brown mottled with yellowish brown and pale brown, the next 6 inches is light gray, the next 6 inches is very pale brown, and the bottom 16 inches is light gray. Red and yellow mottles are below a depth of 52 inches.

Included with this soil in mapping are small areas of Albany, Blanton, Bonifay, Fuquay, Lakeland, Chipola, Compass, and Troup soils. Also included are very small areas of Alapaha, Clarendon, Leefield, Plummer, and Rutlege soils, generally identified by wet spot symbols on the soil map. The included soils make up less than 15 percent of any one mapped area.

In most years, the water table is 40 to 72 inches below the surface for 1 to 3 months. In some years it is between 30 and 40 inches for less than 30 cumulative days. The available water capacity is low. Permeability is very rapid. Natural fertility and the organic content are low.

The natural vegetation is slash and longleaf pine, live oak, post oak, bluejack oak, red oak, huckleberry, and dogwood and an understory of native shrubs and pineland threeawn. Most areas are cutover woodland. Some have been replanted to slash pine. Some have been cleared for crops or bahiagrass pasture.

Limitations are severe for most cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce potential yields. The water table 40 to 72 inches below the surface provides water through capillary rise, thus supplementing the low available water capacity. In very dry seasons the water table drops well below the root zone, so little capillary water is available to plants. Row crops should be planted on the contour in alternate strips with close growing crops. The crop rotation should provide a close growing crop on the soil at least two-thirds of the time. All crops should be fertilized and limed. Soil-improving cover crops and all crop residue should be left on the ground or plowed under. If water is readily available, irrigating the high value crops is usually feasible. Tile or other types of drains are needed for some crops that are damaged by the high water table during the growing season.

The soil is well suited to pasture, for example, Coastal bermudagrass and bahiagrasses. These grasses produce good yields if they are fertilized and limed. Controlled grazing is needed to maintain vigorous plants for maximum yields.

This soil has moderately high potential for longleaf and slash pine. Equipment limitations and seedling mortality are the main management concerns. Slash pine is the most suitable for planting.

The potential is very high for local roads and streets and buildings without basements. It is high for septic tank absorption fields if water is controlled, high for playgrounds if the surface is stabilized, and high for small commercial buildings if the land is shaped and the building design is appropriate. The potential is medium for shallow excavations; side slopes should be shored.

Capability subclass IIIs.

29—Foxworth sand, 5 to 8 percent slopes. This moderately well drained, sloping soil occurs on upland hillsides adjacent to the lower lying wet flatwood areas and the drainageways. It occurs as small areas throughout the county but is dominantly in the southeastern and southern parts. Slopes are smooth to convex.

Typically, the surface layer is dark gray and grayish brown sand about 7 inches thick. The underlying layers are sand to a depth of more than 80 inches. The upper 22 inches is light yellowish brown mottled with light gray and very pale brown and has few to common uncoated sand grains. The lower part is light yellowish brown mottled with light gray, brown, and red and has common to many uncoated sand grains.

Included with this soil in mapping are small areas of Albany, Blanton, Bonifay, Fuquay, Lakeland, Chipola, Compass, and Troup soils. Also included are small areas of soils that are similar to this Foxworth soil but have slopes of 2 to 5 percent. The included soils make up less than 15 percent of any one mapped area.

In most years, the water table is 40 to 72 inches below the surface for 1 to 3 months. In some years it is between 30 and 40 inches for less than 30 cumulative days. The available water capacity is very low. Permeability is very rapid. Natural fertility and the organic content are low.

The natural vegetation is slash and longleaf pine, live oak, post oak, red oak, bluejack oak, huckleberry, and sparse dogwood and an understory of native shrubs and pineland threeawn. Most areas are cutover woodland. Some have been replanted to slash pine. A few areas have been cleared and cultivated or planted to bahiagrass pasture.

Limitations are very severe for cultivated crops. Droughtiness, rapid leaching of plant nutrients, and erosion are the principal limitations for row crops. Special soil improving measures and erosion control are needed. Row crops should be planted on the contour in alternate strips with close growing crops. The crop rotation should provide a close growing plant cover on the soil at least three-fourths of the time. Frequent applications of fertilizer and lime are needed. Soil-building cover crops and all crop residue should be left on the ground or plowed under. If water is readily available, irrigating a few high value crops may be feasible. Irrigation systems should be carefully designed to apply the water at a rate slow enough to prevent runoff and erosion.

This soil has moderately high potential for longleaf and slash pine. Equipment limitations and seedling mortality are the main management concerns. Slash pine is the most suitable for planting.

The soil is moderately suited to pasture. Such deep rooted plants as Coastal bermudagrass and bahiagrass grow well if they are fertilized and limed. Occasional drought severely reduces yields. Grazing must be carefully controlled to permit plants to maintain their vigor for best yields and good ground cover.

The potential is very high for local roads and streets and buildings without basements. No special corrective measures are needed. The potential is high for septic tank absorption fields, but water control is needed. The potential is also high for small commercial buildings; appropriate building design and land shaping are needed. If the surface is stabilized and the land shaped, the potential is medium for playgrounds. It is low for trench sanitary landfill, even if water is controlled and the side walls are sealed or lined with impervious material. Potential is low for shallow excavations, even if the side walls are shored.

Capability subclass IVs.

30—Fuquay coarse sand, 0 to 5 percent slopes. This well drained, nearly level and gently sloping soil occurs as broad, smooth areas on the uplands.

Typically, the surface and subsurface layers are about 32 inches thick. The upper 6 inches is dark grayish brown coarse sand, and the next 26 inches is yellowish brown loamy coarse sand. The upper 12 inches of the subsoil is yellowish brown sandy loam. Below this is 11 inches of yellowish brown sandy clay loam. The lower 25 inches is yellowish brown sandy clay loam mottled with yellow, brown, red, and gray. Within a depth of 60 inches the subsoil is more than 5 percent plinthite.

Included with this soil in mapping are small areas of Albany, Clarendon, Blanton, Bonifay, Foxworth, Chipola, Dothan, Esto, Lakeland, Orangeburg, Compass, Troup, and Wicksburg soils. Also included are small areas of soils that are similar to this Fuquay soil but have slopes of 5 to 8 percent and a few small areas of a similar soil that is less than 5 percent plinthite within a depth of 60 inches. The included soils make up less than 15 percent of any one mapped area.

Permeability is rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and slow in the lower part. Surface runoff is moderately slow. Inherent fertility and the organic matter content are moderately low. The water table is perched above the lower part of the subsoil for a short time during wet periods.

The natural vegetation is longleaf and slash pine, hickory, dogwood, black oak, turkey oak, willow oak, laurel oak, and white oak. The understory is native grasses and shrubs, including Carolina jessamine, southern dewberry, smilax, Virginia creeper, common poison ivy, summer grape, muscadine grape, American beautyberry, huckleberry, and pineland threeawn. Most areas have been cleared for cultivation or replanted to slash pine.

This soil is moderately limited for cultivated crops because of poor soil qualities. It can be cultivated safely under ordinary good farming methods, but droughtiness and rapid leaching of plant nutrients limit the choice of crops and the potential yields. Corn, soybeans, peanuts, and tobacco can be grown. Row crops should be planted on the contour in alternate strips with cover crops. The crop rotation should include cover crops at least half the time. Soil-improving cover crops and all crop residue should be plowed under. For the best yields, good seedbed preparation, fertilization, and liming are needed. This soil is well suited to pasture. Coastal bermudagrass and bahiagrasses are well suited. Yields are good if the crop is fertilized and limed. Controlled grazing is needed

to maintain vigorous plants for maximum yields and good cover.

The potential is moderately high for slash, loblolly, and longleaf pine. Equipment limitations and seedling mortality are the main management concerns. Slash pine is the most suitable for planting.

The potential is very high for small commercial buildings, local roads and streets, and buildings without basements. No special corrective measures are needed. The potential is high for septic tank absorption fields if the size of the field is increased, high for shallow excavations if the side walls are shored, and high for trench sanitary landfill if the pit is sealed or lined with impervious material. The potential is medium for playgrounds if the land is shaped and the surface stabilized.

Capability subclass IIs.

31—Fuquay coarse sand, 5 to 8 percent slopes. This well drained, sloping soil occurs on generally smooth hillsides throughout the county.

Typically, the surface layer is dark grayish brown sand about 5 inches thick. The subsurface layer is yellowish brown loamy sand and loamy coarse sand 25 inches thick. The upper 10 inches of the subsoil is yellowish brown coarse sandy loam. The next 10 inches is yellowish brown, sandy clay loam. The lower part of the subsoil is yellowish brown sandy clay loam mottled in shades of yellow, brown, red, and gray. It extends to a depth of 60 inches or more. Between depths of 40 and 60 inches the subsoil is more than 5 percent plinthite by volume.

Included with this soil in mapping are small areas of Albany, Bonifay, Dothan, Esto, Chipola, Orangeburg, Compass, Troup, and Wicksburg soils. Also included are small areas of similar soils that have slopes of 0 to 5 percent or 8 to 12 percent and a few small areas of similar soils where the content of plinthite is less than 5 percent within a depth of 60 inches. The included soils make up less than 15 percent of any one mapped area.

Permeability is rapid in the surface and subsurface layers, moderate in the upper part of the subsoil, and slow in the lower part. Inherent fertility and the organic matter content are moderately low. The available water capacity is low in the surface and subsurface layers and medium below. The water table is perched above the lower part of the subsoil for a short time during wet periods.

The natural vegetation is longleaf and slash pine, hickory, dogwood, black oak, white oak, willow oak, live oak, and laurel oak. The understory is native grasses and shrubs, including pineland threeawn, southern dewberry, smilax, Virginia creeper, summer grape, muscadine grape, American beautyberry, yaupon, and huckleberry. Most areas have been cleared for crops or planted to slash pine. Some are cutover woodland.

Droughtiness and rapid leaching of plant nutrients severely limit the suitability of this soil for most row crops. The slopes make cultivation more difficult and increase the hazard of erosion. Special soil-improving measures are needed. Row crops should be planted in strips on the contour alternating with wider strips of close growing, soil-improving crops. The crop rotation should include close growing crops at least two-thirds of the time. All crops should be fertilized and limed. Soil-improving crops and the residue of all other crops should be left on the land or plowed under.

The soil is moderately well suited to pasture. Deep rooted plants, such as Coastal bermudagrass and bahiagrasses, are well suited. The slope increases the erosion hazard and reduces the potential yields. If the soil is fertilized and limed, good stands of grass can be produced. Controlled grazing is needed in maintaining vigorous plants and good ground cover.

The potential is moderately high for loblolly, slash, and longleaf pine. Equipment limitations and seedling mortality are the main management concerns. Slash pine is the most suitable for planting.

The potential is very high for local roads and streets and buildings without basements. No corrective measures are needed. The potential is high for septic tank absorption fields if the size of the field is increased, high for trench sanitary landfill if the trench is sealed or lined with impervious material, and high for small commercial buildings if an appropriate building design is used and the land is shaped. The potential is medium for playgrounds. Surface stabilization and land shaping are needed. If the side walls are shored, potential is medium for shallow excavations.

Capability subclass IIIe.

32—Grady fine sandy loam. This poorly drained, nearly level soil occurs in low flat areas, depressions, and poorly defined drainageways. Slopes are smooth to slightly concave. Areas range from about 5 to 100 acres.

Typically, the surface layer is dark gray fine sandy loam about 6 inches thick. The upper 5 inches of the subsoil is grayish brown clay. Below this is gray clay mottled with yellow, red, and brown. The subsoil extends to a depth of 76 inches or more.

Included with this soil in mapping are small areas of Alapaha, Clarendon, Bethera, Duplin, Hornsville, and Pansey soils. A few small areas where the surface layer is black or very dark gray and is more than 8 inches thick are included in some mapped areas. In a few small areas the upper part of the subsoil is sandy clay loam, and in some depressions coarse textured material from surrounding uplands has washed in and formed an overburden of sandier texture. In some areas, the surface layer is loam or sandy clay loam. The included soils make up about 25 percent of any one mapped area.

In most years the water table is at or near the surface and depressions are ponded for 2 to 6 months. Permeability is slow. The available moisture capacity is medium. Drainage is slow; it is impeded by the shallow water table. Natural fertility and the organic matter con-

tent are moderately high in the top 10 inches and low below.

The natural vegetation is sweetgum, sweetbay, red maple, water oak, water tupelo, and cypress. The understory is water-tolerant grasses, reeds, and shrubs.

Limitations are very severe for cultivated crops because of wetness. The slowly permeable subsoil makes adequate drainage difficult to maintain. Even if drainage is adequate, the soil is suited to only a few important crops. A water control system is needed. It should be designed to remove excess surface water and internal water rapidly. Seedbeds should be well prepared by bedding the rows. The crop rotation should provide a close growing, soil-improving crop on the soil at least three-fourths of the time. These crops and all other crop residue should be plowed under. Fertilizer and lime are needed for highest yields.

The soil is moderately well suited to pasture. Coastal bermudagrass, improved bahiagrasses, and clovers are well suited. Drainage is needed to remove excess surface water during heavy rains. Good management includes water control, fertilization, liming, and controlled grazing. Areas in depressions are not suitable for cultivation or pasture.

This soil has high potential for loblolly and slash pine and sweetgum. Loblolly pine, slash pine, and American sycamore are the most suitable for planting. An adequate water control system is needed.

The potential is very low for septic tank absorption fields, trench sanitary landfill, playgrounds, local roads and streets, and dwellings without basements. It is low for small commercial buildings and shallow excavations. Water control and protection from ponding are needed for all of these uses. In addition, mounding is needed for septic tank absorption fields. Filling with suitable material is needed for playgrounds, small commercial buildings, local roads and streets, and dwellings without basements.

Capability subclass IVw.

33—Greenville fine sandy loam, 2 to 5 percent slopes. This well drained, gently sloping soil is on uplands. Slopes are smooth and convex.

Typically, the surface layer is dark reddish brown fine sandy loam about 8 inches thick. The subsoil extending to a depth of 72 inches or more is dark red sandy clay. In some areas the lower part of the subsoil has few to common brown and red mottles.

Included with this soil in mapping are small areas of Faceville, Oktibbeha, Orangeburg, and Red Bay soils. Also included are a few small areas of similar soils that have slopes of less than 2 percent or of 5 to 8 percent and a few small areas of eroded soils where the surface layer is sandy clay loam or sandy clay. The included soils make up less than 15 percent of any one mapped area.

The water table is below 6 feet. The available moisture capacity is medium to high. Permeability is moderate. Runoff is moderate, and internal drainage is good. Natural fertility and the content of organic matter are moderate in the surface layer and low in the subsoil.

The natural vegetation is slash and longleaf pine, sweetgum, hickory, dogwood, white oak, water oak, post oak, live oak, southern redcedar, and magnolia. The understory is smilax, Virginia creeper, common poison ivy, muscadine grape, red buckeye, American beautyberry, American holly, and native grasses and weeds. Most areas have been cleared for cultivation.

The potential is high for most cultivated crops suited to the county. Limitations are moderate because of the erosion hazard. A wide variety of cultivated crops is well suited. If well managed, corn and soybeans grow well. Moderate erosion control measures are needed, including a system of well designed terraces having stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should provide a cover crop on the soil at least half the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and liming are needed.

The potential is high for improved pasture. The soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, the improved bahiagrasses, and clovers and other legumes. Yields are good if the crop is well managed. Fertilization, liming, and controlled grazing are essential in maintaining vigorous plants for highest yields and good soil cover.

The potential is moderately high for slash, longleaf, and loblolly pine. Loblolly and slash pine are the most suitable for planting.

The potential is very high for trench sanitary landfill and shallow excavations. No special corrective measures are needed. The potential is high for septic tank absorption fields if the size of the field is increased, high for playgrounds if the land is shaped, and high for small commercial buildings and dwellings without basements if larger footings and foundations are installed. Potential is high for local roads and streets if the structural strength is increased.

Capability subclass IIe.

34—Greenville fine sandy loam, 5 to 8 percent slopes. This well drained, sloping soil is on uplands. Slopes are generally smooth and convex.

Typically, the surface layer is dark reddish brown fine sandy loam about 6 inches thick. The subsoil, extending to a depth of 75 inches or more, is dark red sandy clay. In some areas the lower part of the subsoil has few to common brown and red mottles.

Included with this soil in mapping are small areas of Faceville, Oktibbeha, Orangeburg, and Red Bay soils. Also included are a few small areas of similar soils that have slopes of 5 to 8 percent and a few small areas of

eroded soils where the surface layer is sandy clay loam or sandy clay. The included soils make up less than 15 percent of any one mapped area.

The water table is below a depth of 6 feet. The available moisture capacity is medium to high. Permeability is moderate. Runoff is moderate to rapid, and internal drainage is good. Natural fertility and the content of organic matter are moderate in the surface layer and low in the subsoil.

The natural vegetation is slash and longleaf pine, sweetgum, hickory, dogwood, white oak, water oak, post oak, live oak, southern redcedar, and magnolia. The understory is smilax, Virginia creeper, common poison ivy, muscadine grape, red buckeye, American beautyberry, American holly, and native grasses and weeds. Most areas have been cleared for cultivation.

Limitations are moderate for cultivated crops because of the erosion hazard. A wide variety of cultivated crops is well suited. If well managed, corn and soybeans grow well. Intensive erosion control measures are needed, including a system of well designed terraces having stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should provide a cover crop on the soil at least two-thirds of the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and liming are needed.

The soil is well suited to pasture and hay crops. If well managed, tall fescue, Coastal bermudagrass, the improved bahiagrasses and clovers and other legumes grow well. Fertilization, liming, and controlled grazing are essential in maintaining vigorous plants for highest yields and good soil cover.

The potential is moderately high for slash, longleaf, and loblolly pine. Loblolly and slash pine are the most suitable for planting.

The potential is very high for trench sanitary landfill. No special corrective measures are needed. The potential is high for septic tank absorption fields, playgrounds, local roads and streets, buildings without basements, and shallow excavations. Larger absorption fields are needed for septic tanks. Land shaping is needed for playgrounds.

Capability subclass IIIe.

35—Hornsville fine sandy loam, 0 to 2 percent slopes. This moderately well drained, nearly level soil occurs dominantly on broad flats adjacent to large stream flood plains. Slopes are smooth to convex.

Typically, the surface layer is dark gray fine sandy loam about 6 inches thick. The subsurface layer is very pale brown fine sandy loam about 4 inches thick. The subsoil is sandy clay. The upper 12 inches is yellowish brown, and the lower 24 inches is reticulately mottled in shades of brown, gray, and red and contains few to many mica flakes.

Included with this soil in mapping are small areas of Clarendon, Blanton, Bethera, Chipola, Duplin, Esto, Faceville, Fuquay, Orangeburg, and Wicksburg soils. Also included are small areas of similar soils that have slopes of 2 to 5 percent, a few small areas of soils that are similar to this Hornsville soil but have surface and subsurface layers 20 to 30 inches thick, and areas of similar soils that have a thicker subsoil.

In most years the water table is between depths of 30 and 40 inches for 3 to 5 months. In some years it is within a depth of 30 inches for 1 to 2 months. The available water capacity is medium. Permeability is rapid in the surface layer and moderately slow in the subsoil. Natural fertility and the content of organic matter are moderately low.

The natural vegetation is a forest of longleaf, slash, and loblolly pine and mixed hardwoods consisting of several species of oak and hickory, dogwood, persimmon, and sweetgum. The understory is mainly native grasses and shrubs, including inkberry, waxmyrtle, and pineland threeawn. Most of the acreage is wooded. A few areas have been cleared and cultivated or developed into improved pasture. Some areas have been cleared and replanted to slash pine.

This soil has moderate limitations for cultivated crops because of wetness. If well managed, corn, peanuts, soybeans, and tobacco grow well. Carefully designed tile or open drains that remove excess water rapidly after heavy rains are needed. Cover crops should be rotated with row crops, and the crop rotations should provide a cover crop on the soil at least half the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. Good seedbed preparation, fertilization, and liming are also important.

The soil is well suited to pasture and hay crops, for example, tall fescue, clovers, Coastal bermudagrass, and bahiagrasses. Regular additions of fertilizer and lime are needed for highest yields. Grazing should be controlled to maintain vigorous plants for best yields.

This soil has high potential for loblolly and slash pine and sweetgum. Loblolly and slash pine, sweetgum, and yellow-poplar are the most suitable for planting.

The potential is high for trench sanitary landfill, playgrounds, small commercial buildings, local roads and streets, and shallow excavations. Water control is needed for trench sanitary landfill. Also needed is surface stabilization for playgrounds, larger footings and foundations for small commercial buildings, increased structural strength for local roads and streets, and water control and special equipment for shallow excavations. The potential is medium for septic tank absorption fields if water is controlled and a larger absorption field is installed. The potential is medium for dwellings without basements if larger footings and foundations are used.

Capability subclass IIw.

36—Hornsville fine sandy loam, 2 to 5 percent slopes. This moderately well drained, gently sloping soil occurs on broad low ridges adjacent to the flood plains along large streams. Slopes are smooth to convex.

Typically, the surface layer is very dark gray fine sandy loam about 4 inches thick. The subsurface layer is grayish brown fine sandy loam about 5 inches thick. The upper 10 inches of the subsoil is yellowish red sandy clay. The next 12 inches is mottled yellowish red, red, yellowish brown, strong brown, and light gray sandy clay. The lower 12 inches is mottled yellowish brown, red, and pale brown sandy clay. Below a depth of 43 inches and extending to 76 inches or more is fine sandy loam that is mottled yellowish red, light gray, brownish yellow, and yellow.

Included with this soil in mapping are small areas of Clarendon, Blanton, Bethera, Chipola, Duplin, Esto, Faceville, Fuquay, Orangeburg, and Wicksburg soils. Also included are small areas of similar soils that have slopes of 5 to 8 percent or 1 to 2 percent and areas of a soil that is similar to this Hornsville soil but its subsoil extends below 60 inches. The included soils make up about 15 percent of any one mapped area.

In most years, the water table is at depths of 30 to 40 inches for 3 to 5 months. In some years it is within 30 inches for 1 to 2 months. The available water capacity is medium. Permeability is rapid in the surface layer and moderately slow in the subsoil. Runoff is medium. Natural fertility and the supply of organic matter are moderately low.

The natural vegetation is a forest of longleaf, slash, and loblolly pine and mixed hardwoods, consisting of several oak species, hickory, dogwood, persimmon, and sweetgum. The understory is mainly grasses and shrubs, including inkberry, waxmyrtle, and pineland threeawn. Most areas are cutover woodland, but a few have been cleared for crops or developed into improved pasture. Some areas have been cleared and replanted to slash pine.

Limitations are moderate for cultivated crops because of the erosion hazard. The number of suitable crops is somewhat limited by occasional wetness. If well managed, such crops as corn, soybeans, and peanuts grow well. Moderate erosion control and water control measures are needed. Rows should be bedded on the contour. Row crops should be planted in alternate strips with cover crops. The crop rotation should provide a close growing crop on the soil at least half the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilizer, and lime are needed. For some water sensitive crops, such as tobacco, tile drains are needed to remove excess water during wet seasons.

The soil is well suited to improved pasture and hay crops, for example, tall fescue, clovers, Coastal bermudagrass and bahiagrasses. Yields are good if the crop is fertilized and limed. Controlled grazing is needed to maintain vigorous plants for maximum yields and a good ground cover.

This soil has high potential for loblolly and slash pine and sweetgum. Loblolly and slash pine, sweetgum, and yellow-poplar are the most suitable for planting.

The potential is high for trench sanitary landfill, playgrounds, small commercial buildings, local roads and streets, and shallow excavations. Water control is needed for sanitary landfill, surface stabilization for playgrounds, larger footings and foundations for small commercial buildings, increased structural strength for local roads and streets, and water control and special equipment for shallow excavations. The potential is medium for septic tank absorption fields if water is controlled and if a larger absorption field is used. The potential is medium for dwellings without basements if larger footings and foundations are used. Land shaping and surface stabilization are needed for playgrounds.

Capability subclass IIe.

37—Iuka loam. This moderately well drained, nearly level soil occurs in slightly depressed areas of the uplands. Slopes are smooth and concave. Areas are small, about 3 to 10 acres.

Typically, the surface layer is dark brown loam about 12 inches thick. Below this is about 4 inches of dark brown loam and 9 inches of dark yellowish brown sandy loam. Next is about 31 inches of grayish brown sandy loam mottled with brown, yellow, and gray. Gray colors increase with increasing depth. The sandy loam is underlain by a layer of pale brown sandy clay loam that has lenses and pockets of sandy loam and loamy sand and is mottled with gray, brown, and yellow.

Included with this soil in mapping are small areas of Albany, Blanton, Chipola, Grady, and Orangeburg soils. Also included are small areas of a somewhat poorly drained soil that has a subsoil of sandy clay loam or sandy clay. In some pedons, the surface layer is sandy loam or fine sandy loam. The included soils make up less than 25 percent of any one mapped area.

In most years the water table is within 40 inches of the surface for 1 to 3 months. Flash flooding is common in periods of heavy rainfall, but the duration of flooding is brief, generally 3 to 10 days. The available moisture capacity is medium. Permeability is moderate. Natural fertility and the organic matter content are medium in the top 12 inches and moderately low below.

The natural vegetation is water oak, white oak, laurel oak, live oak, slash pine, longleaf pine, sweetgum, willow, beech, red maple, and hickory. The understory is various smilax species, southern dewberry, common poison ivy, summer grape, muscadine grape, American beautyberry, sumac, carpet weed, pigweed, trumpet creeper, ragweed, horseweed, dogfennel, cudweed, bitterweed, common cocklebur, and vaseygrass.

The soil has moderate limitations for cultivated crops because of the wetness and the hazard of flooding. The

number of well suited crops is limited, but if water control is adequate, such crops as corn and soybeans can be grown. The water control system should remove the excess surface water and internal water in the upper layers during heavy rains, and it should protect the soil from flooding. The crop rotation should provide a close growing, soil-improving crop on the soil at least half the time. All crop residue and soil-improving crops should be plowed under. Seedbed preparation should include bedding the rows. Adding fertilizer and lime is also important.

This soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, bahiagrass, and clovers. Yields are moderate to high if the crop is fertilized and limed. Grazing should be controlled to maintain the vitality of plants for highest yields. Pastures should be protected from flooding.

This soil has very high potential for loblolly pine, sweetgum, and eastern cottonwood. Yellow-poplar, eastern cottonwood, and loblolly pine are the most suitable for planting. Equipment limitations and seedling mortality are the major management concerns.

The potential is high for septic tank absorption fields. It is medium for trench sanitary landfill, local roads and streets, and shallow excavations and low for playgrounds, small commercial buildings, and buildings without basements. Water control and protection from ponding are needed for all of these uses.

Capability subclass IIw.

38—Lakeland sand, 0 to 5 percent slopes. This excessively drained, nearly level to gently sloping soil occurs on uplands throughout the county. Slopes are smooth to convex.

Typically, the surface layer is dark brown sand about 5 inches thick. The underlying material is 35 inches of yellowish brown, loose sand over very pale brown sand that extends to a depth of 82 inches or more.

Included with this soil in mapping are small areas of Albany, Blanton, Bonifay, Foxworth, Chipola, Fuquay, and Troup soils. Also included are small areas of similar soils that have slopes of 5 to 8 percent. The included soils make up less than 15 percent of any one mapped area.

The natural vegetation is longleaf pine, slash pine, blackjack oak, bluejack oak, turkey oak, post oak, and persimmon. The understory is smilax, blackberry, yaupon, dwarf live oak, running oak, huckleberry, milkweed, ragweed, mayweed, cornflower, dogfennel, cudweed, and sparse pineland threeawn. Large areas of this soil were cleared and planted to tung nut trees, but most are being converted to pasture. Some are under urban development. The rest of the acreage is wooded. All merchantable timber has been removed, and the plant cover is scrub oak. Some areas have been replanted to slash pine and sand pine.

The available water capacity is low throughout the soil. Permeability is very rapid. The inherent fertility and organic matter are low.

Droughtiness and rapid leaching of plant nutrients restrict the number of suitable crops and reduce potential yields. If the soil is cultivated, intensive management is needed. Row crops should be planted on the contour in alternate strips with close growing crops. The crop rotation should include close growing plants at least three-fourths of the time. Soil-improving crops and all crop residue should be plowed under. Only a few crops produce good yields without irrigation. If water is readily available, irrigation of these crops is usually feasible.

The soil is moderately suited to pasture and hay crops. Deep rooted plants such as Coastal bermudagrass and bahiagrass are well suited, but periodic drought reduces yields. Regular additions of fertilizer and lime are needed. Grazing should be controlled so that plants remain vigorous and yields high.

This soil has moderately high potential for longleaf and slash pine. Equipment limitations, seedling mortality, and plant competition are the main management concerns. Slash pine is the most suitable for planting.

The potential is very high for septic tank absorption fields, low commercial buildings, local roads and streets, and buildings without basements. No special corrective measures are needed for these uses. The potential is medium for trench sanitary landfill if the trench is sealed or lined with impervious material. It is medium for playgrounds if the surface is stabilized and medium for shallow excavations if the side walls are shored.

Capability subclass IVs.

39—Lakeland sand, 5 to 8 percent slopes. This deep, excessively drained, sloping soil occurs on side slopes along well defined drainageways of the uplands. Slopes are smooth and convex.

Typically, the surface layer is dark brown sand about 4 inches thick. The underlying layers are sand to a depth of 80 inches or more. The upper 33 inches is brownish yellow coated sand. Below 40 inches and extending to 80 inches or more is very pale brown sand.

Included with this soil in mapping are small areas of Albany, Blanton, Bonifay, Foxworth, Chipola, Fuquay, and Troup soils. Also included are small areas of similar soils that have slopes of 0 to 5 percent and a few areas of similar soils that have slopes of 8 to 12 percent. The included soils make up less than 15 percent of any one mapped area.

The natural vegetation is longleaf and slash pine, blackjack oak, bluejack oak, turkey oak, post oak, and persimmon. The understory is smilax, blackberry, yaupon, dwarf live oak, runner oak, huckleberry, milkweed, ragweed, mayweed, cornflower, dogfennel, cudweed, and sparse pineland threeawn. Large areas of this soil were cleared and planted to tung nut trees, but most are being converted to pasture. Some are under urban

development. The rest of the acreage is wooded. All merchantable timber has been removed, and the plant cover is scrub oak. Some areas have been replanted to slash pine and sand pine.

The available water capacity is low throughout the soil. Permeability is very rapid. The inherent fertility and the organic matter content are low.

This soil is not suitable for cultivated crops because of poor soil quality, steepness of slope, and susceptibility to erosion. It is moderately suited to pasture. Deep rooted plants such as Coastal bermudagrass and bahiagrass are well suited, but periodic drought reduces yields. Regular additions of fertilizer and lime are needed. Grazing should be controlled so that plants remain vigorous and yields high.

These soils have moderately high potential for slash and longleaf pine. Equipment limitations and seedling mortality are the main management concerns. Slash pine is the most suitable for planting.

The potential is very high for septic tank absorption fields, local roads and streets, and dwellings without basements. No special corrective measures are needed. It is high for small commercial buildings if the building design is appropriate and the land is shaped. The potential is medium for playgrounds if the land is shaped and the surface stabilized. It is medium for shallow excavations if the side walls are shored. The potential is low for trench sanitary landfill even if the trench is lined or sealed with impervious material.

Capability subclass VIs.

40—Lakeland sand, 8 to 12 percent slopes. This excessively drained, deep, strongly sloping soil occurs on hillsides. Slopes are smooth, irregular, and convex.

Typically, the surface layer is dark brown or dark grayish brown sand 3 to 4 inches thick. The underlying layers are sand to a depth of 80 inches or more. The upper 40 inches is brownish yellow, and the lower part is pale brown or very pale brown sand that has many uncoated sand grains.

Included with this soil in mapping are small areas of Albany, Blanton, Bonifay, Foxworth, Chipola, Esto, Faceville, Fuquay, Orangeburg, and Troup soils and soils at the base of the steeper slopes that have a subsoil of mixed sandy clay loam and sandy clay at varying depths. Also included are areas of similar soils that have slopes of 5 to 8 percent and a few areas where slopes are 12 to 30 percent. The steeper slopes are usually narrow escarpment-like areas adjacent to drainageways and low lying wet depressional areas. The included soils make up less than 20 percent of any one mapped area.

The natural vegetation is longleaf and slash pine, blackjack oak, bluejack oak, turkey oak, post oak, and persimmon. The understory is smilax, blackberry, yaupon, dwarf live oak, runner oak, huckleberry, milkweed, ragweed, mayweed, cornflower, dogfennel, cudweed, and sparse pineland threeawn. Large areas of this soil were cleared and planted to tung nut trees, but most are being converted to pasture. Some are under urban development. The rest of the acreage is wooded. All merchantable timber has been removed, and the plant cover is scrub oak. Some areas have been replanted to slash pine and sand pine.

This soil has low available water capacity, low inherent fertility, and low organic matter content throughout. Permeability is very rapid.

The soil is not suitable for cultivated crops because of poor soil quality, steepness of slope, and susceptibility to erosion. It is moderately suited to pasture. Deep rooted plants such as Coastal bermudagrass and bahiagrass are well suited, but periodic drought reduces yields. Regular fertilizing and liming are needed. Grazing should be controlled so that plants remain vigorous and yields high.

This soil has moderately high potential for slash and longleaf pine. Equipment limitations and seedling mortality are management concerns. Slash pine is the most suitable for planting.

This soil has high potential for septic tank absorption fields if the field is parallel to the slope. The potential is high for small commercial buildings if the building design is appropriate. It is high for local roads and streets and buildings without basements if the land is shaped. It is low for playgrounds, even if the surface is stabilized and the land shaped, and low for shallow excavations, even if the side walls are shored.

Capability subclass VIs.

41—Lakeland sand, 12 to 30 percent slopes. This excessively drained, steep upland soil occurs on hillsides. Slopes are steep and irregular.

Typically, the surface layer is dark brown or dark grayish brown sand 2 to 4 inches thick. The underlying layers are sand to a depth of 80 inches or more. The upper 40 inches is brownish yellow coated sand. Below this is pale brown or very pale brown sand that has many uncoated sand grains.

Included with this soil in mapping are small areas of Albany, Blanton, Bonifay, Foxworth, Chipola, Esto, Faceville, Fuquay, Orangeburg, and Troup soils. Also included are soils at the base of some slopes that have a subsoil of sandy clay or sandy clay loam within a depth of 40 inches. Areas of similar soils that have slopes of 8 to 12 percent, escarpments, and very steep slopes are included in some mapped areas. The included soils make up less than 20 percent of any one mapped area.

The natural vegetation is longleaf and slash pine, blackjack oak, turkey oak, post oak, and persimmon. The understory is smilax, blackberry, yaupon, dwarf live oak, runner oak, huckleberry, milkweed, ragweed, mayweed, cornflower, dogfennel, cudweed, and sparse pineland threeawn. Large areas of this soil were cleared and planted to tung nut trees, but most are being converted to pasture. Some are under urban development. The rest of the acreage is wooded. The merchantable timber has

been removed, and the plant cover is scrub oak. Some areas have been replanted to slash pine and sand pine.

This soil has low available water capacity, low inherent fertility, and low organic matter content throughout. Permeability is very rapid throughout.

This soil is not suited to field crops or pasture. It has moderately high potential for slash and longleaf pine. Equipment limitations and seedling mortality are management concerns. Slash pine is the most suitable for planting.

The potential is high for local roads and streets and dwellings without basements. Land shaping and an appropriate building design are needed. The potential is medium for septic tank absorption fields if the field is installed parallel to the slope and medium for small commercial buildings if the land is shaped and the building design is appropriate. The potential is low for trench sanitary landfill, even if the land is shaped, low for playgrounds if the land is shaped and the surface stabilized, and low for shallow excavations if the side walls are shored.

Capability subclass VIIs.

42—Leefield loamy sand. This somewhat poorly drained, nearly level upland soil occurs in wet areas along poorly defined drainageways in the flatwoods. Slopes are smooth to convex and 0 to 2 percent.

Typically, the surface layer is very dark gray loamy sand about 9 inches thick. The subsurface layer is light yellowish brown loamy sand about 19 inches thick. The upper 15 inches of the subsoil is light yellowish brown sandy loam that has few to many mottles of gray, brown, yellow, and red. The lower 41 inches of the subsoil is sandy clay loam reticulately mottled with gray, yellow, brown, and red. The subsoil extends to a depth of 84 inches or more.

Included with this soil in mapping are small areas of Alapaha, Albany, Clarendon, Compass, Foxworth, Grady, and Pansey soils. Also included are small areas of a soil that is similar to this Leefield soil but has sandy clay or clay in the lower part of the subsoil and small areas of a soil that is similar to this Leefield soil to a depth of about 48 inches but is sandy loam or loamy sand below 48 inches. In a few small areas slopes are 2 to 5 percent. Small areas of more poorly drained soils are in some mapped areas. A few small areas of a similar soil have a very dark gray to black surface layer 10 to 12 inches thick. The included soils make up less than 20 percent of any one mapped area.

The water table is perched between depths of 18 and 30 inches for about 4 months during the year. The available moisture capacity is medium in the subsoil but low in the surface and subsurface layers. Permeability is rapid in the surface and subsurface layers and moderately slow in the lower part of the subsoil. Internal drainage is moderately slow; it is impeded by the shallow water table. Natural fertility and the organic matter content are moderate in the top 10 inches and low below 10 inches.

The natural vegetation is longleaf, slash, and pond pine, sweetgum, water oak, sweetbay, blackgum, and red maple. The understory is native grasses and shrubs including inkberry, waxmyrtle, and pineland threeawn.

This soil has moderate limitations for cultivated crops because of wetness. The water table is at or near the surface much of the time. Crops such as corn and soybeans are suitable only if the soil is properly drained. Tile drains or open ditches are needed. Row crops should be rotated with cover crops, and the cover crops should be on the soil at least half the time. Soil-improving cover crops and all crop residue should be plowed under. For best yields, good seedbed preparation, fertilization, and liming are needed.

This soil is well suited to pasture and hay crops. If well managed, such grasses as Coastal bermudagrass and bahiagrasses grow well. White clovers and other legumes are moderately well suited. For best yields fertilization and liming are needed, and grazing should be carefully controlled to maintain plant vigor.

This soil has moderately high potential for growing slash, loblolly, and longleaf pine. Equipment limitations and seedling mortality are the chief management concerns. Loblolly and slash pine are the most suitable for planting.

The potential is high for small commercial buildings, local roads and streets, and dwellings without basements. It is medium for septic tank absorption fields, trench sanitary landfills, playgrounds, and shallow excavations. Water control is needed for all of these uses. In addition, larger absorption fields are needed for septic tanks. Land shaping is needed for trench sanitary landfills. Surface stabilization is needed for playgrounds. The side walls of shallow excavations should be shored.

Capability subclass IIw.

43—Oktibbeha Variant-Rock outcrop complex, 2 to 5 percent slopes. This map unit consists of small areas of gently sloping, moderately well drained Oktibbeha variant soils and limestone outcrops. Generally, it occurs on ridges in dissected uplands. The soil and the rock outcrop are so intermingled that they could not be shown separately at the scale selected for mapping. Areas of the unit are about 5 to 40 acres.

The Oktibbeha variant soil makes up about 60 percent of the unit. Typically, the surface layer is 2 inches of dark reddish brown sandy clay. The upper 15 inches of the subsoil is yellowish red and red clay, and the next 11 inches is yellowish red and yellowish brown clay. Below this, the subsoil is yellowish brown clay mottled with red. Soft black manganese concretions occur throughout the subsoil. Soft light gray and white limestone is at a depth of about 48 inches. During periods of low rainfall, the soil dries out, and cracks up to an inch wide extend from the surface through the upper part of the subsoil.

The Oktibbeha variant soil has very slow permeability. Surface runoff is medium. The available water capacity is medium to high. The water table is below a depth of 72 inches. The organic matter content and inherent fertility are low.

Outcrops of limestone make up about 20 percent of the unit. They are about 10 to 20 feet wide and 100 to 200 feet long. Most are horizontal and are at the crest of the slope. Others are in scattered areas throughout the unit.

Minor soils make up about 20 percent of the unit. Small areas of Esto, Faceville, Greenville, Orangeburg, Red Bay, and Dothan soils are in most mapped areas.

The natural vegetation on this unit is slash pine, longleaf pine, loblolly pine, shortleaf pine, hickory, beech, water oak, willow oak, southern red oak, laurel oak, white oak, post oak, redcedar, sweetgum, and hackberry. The understory is native shrubs and weeds that include American beautyberry, smilax, blackberry, common briers, sumac, muscadine grape, honeylocust, and poison ivy. Most areas are cutover forest. Merchantable trees have been harvested.

This unit has severe limitations for cultivated crops because of the erosion hazard and the rock outcrops. Intensive erosion control measures are needed. Well designed terraces with stabilized outlets are needed. Row crops should be cultivated on the contour in alternate strips with close growing crops. The crop rotation should include close growing crops at least two-thirds of the time. Soil-building cover crops and all crop residue should be left on the land or plowed under. For maximum yields, good seedbed preparation, fertilizer, and lime are needed.

The unit is well suited to pasture, for example, tall fescue, clovers, Coastal bermudagrass, and improved bahiagrasses. Yields are good if the crop is fertilized and limed. Controlled grazing is needed to maintain vigorous plants for maximum yields and good soil cover.

The unit has moderately high potential for loblolly pine. Loblolly pine is the most suitable for planting.

This unit has high potential for trench sanitary landfill and shallow excavations if the rock outcrop does not interfere with installation. Special equipment is needed for both of these uses. In areas where there are no rock outcrops, the potential is medium for septic tank absorption fields if a larger field is used. The potential is medium for playgrounds if the surface is stabilized. It is medium for dwellings without basements if there are no rock outcrops, but greater structural strength and larger footings are needed. The potential is low for small commercial buildings and local roads and streets, even if the structural strength is increased and larger footings and foundations are used.

Capability subclass IIIe.

44—Oktibbeha Variant-Rock outcrop complex, 5 to 12 percent slopes. This map unit consists of small areas of sloping to strongly sloping, moderately well drained Oktibbeha variant soils and limestone outcrops. Generally, it occurs on hillsides of dissected uplands. The soil and the rock outcrop are so intermingled that they could not be shown separately at the scale selected for mapping. Areas of the unit are about 5 to 75 acres.

Oktibbeha variant soils make up about 60 percent of the unit. Typically, the surface layer is 2 inches of dark reddish brown clay. The upper 12 inches of the subsoil is yellowish red and red clay. The next 10 inches is red clay mottled with yellowish brown. Below this, the subsoil is yellowish brown and yellowish red clay mottled with red, yellow, brown, and gray. Soft black manganese concretions occur throughout the subsoil. Soft light gray and white limestone is at a depth of about 45 inches. During periods of low rainfall, the soil dries out, and cracks up to an inch wide extend through the upper part of the subsoil.

Oktibbeha variant soils have very slow permeability. Surface runoff is high. The available water capacity is medium to high. The water table is below a depth of 72 inches. The organic matter content and inherent fertility are low.

Outcrops of limestone make up about 20 percent of the unit. They are about 10 to 20 feet wide and 100 to 200 feet long. Most are horizontal and are at the crest of the slope. Others are in scattered areas throughout the unit.

Minor soils make up about 20 percent of the unit. Small areas of Esto, Faceville, Greenville, Orangeburg, Red Bay, and Dothan soils are in most mapped areas.

The natural vegetation is slash pine, longleaf pine, loblolly pine, shortleaf pine, hickory, beech, water oak, willow oak, southern red oak, laurel oak, white oak, post oak, redcedar, sweetgum, and hackberry. The understory is native shrubs and weeds that include American beautyberry, smilax, blackberry, common briers, sumac, muscadine grape, honeylocust, and poison ivy. Most areas are cutover forests. The merchantable trees have been harvested.

This unit has very severe limitations for cultivated crops because of the erosion hazard and the rock outcrops. The slopes are too steep for effective terracing, so erosion control is limited chiefly to the use of a plant cover. If row crops are grown, they should be in narrow strips on the contour alternating with wider strips of close growing crops. The crop rotation should include close growing plants at least three-fourths of the time. All crop residue should be left on the soil. For best yields of row crops and close growing crops, lime and fertilizer are needed.

The unit is moderately well suited to pasture, for example, Coastal bermudagrass and bahiagrasses. If the crop is limed and fertilized, it produces fair grazing and a good sod cover for protection against erosion. Grazing should be carefully controlled to maintain vigorous plants and maximum growth for good cover.

The unit has moderately high potential for loblolly pine. Loblolly pine is the most suitable for planting.

If the rock outcrop does not interfere with installation, the potential for trench sanitary landfill is high. No special equipment is needed. In areas where there are no rock outcrops, the potential is medium for septic tank absorption fields, buildings without basements, and shallow excavations. A larger absorption field is needed for septic tanks. For dwellings without basements, an appropriate building design, increased structural strength, and larger footings and foundations are needed. For shallow excavations, special equipment and proper placement on the slope are needed. The potential for playgrounds is low, even if the land is shaped and the surface stabilized, and it is very low for small commercial buildings, even if increased structural strength, larger footings, land shaping, and appropriate building designs are used.

Capability subclass IVe.

45—Orangeburg loamy sand, 0 to 2 percent slopes. This well drained, nearly level, deep soil is on the uplands. Slopes are smooth to slightly convex.

Typically, the surface layer is brown loamy sand 9 inches thick. The upper 8 inches of the subsoil is yellowish red sandy clay loam. This is underlain by red sandy clay loam that extends to a depth of 72 inches or more.

Included with this soil in mapping are small areas of Chipola, Dothan, Esto, Faceville, Fuquay, Greenville, Red Bay, and Wicksburg soils and, in some mapped areas, small areas of Iuka soils, local alluvium, or moderately well drained soils in small depressions. Also included are a few small areas of similar soils that have slopes of 2 to 5 percent. The included soils make up less than 15 percent of any one mapped area.

This soil has medium available water capacity. Permeability is moderate, and runoff is slow. Natural fertility and the organic matter content are moderately low. The water table is below a depth of 72 inches.

The natural vegetation is longleaf and slash pine and mixed hardwoods, including white oak, red oak, live oak, laurel oak, sweetgum, hickory, dogwood, and persimmon. The understory consists of native grasses and shrubs including huckleberry, southern dewberry, blackberry, American beautyberry, smilax, broomsedge, and pineland threeawn. Most areas of this soil have been cleared for cultivation. A few have been replanted to slash pine.

This soil has few limitations for cultivated crops. It is well suited to such crops as corn, soybeans, peanuts, and tobacco without special erosion control or water control measures. Good seedbed preparation, fertilization, liming, and crop rotation are needed to keep the soil in good condition. Cover crops should be alternated with row crops. All crop residue should be plowed under.

This soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, the improved bahiagrasses, clovers, and other legumes. Yields are good if the crop is well managed. Fertilization, liming, and controlled grazing are needed to maintain vigorous plants, high yields, and good soil cover.

This soil has high potential for growing loblolly, longleaf, and slash pine. Slash and loblolly pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, trench sanitary landfill, playgrounds, small commercial buildings, local roads and streets, buildings without basements, and shallow excavations. No special corrective measures are needed.

Capability class I.

46—Orangeburg loamy sand, 2 to 5 percent slopes. This well drained, gently sloping, moderately permeable soil is on uplands. Slopes are smooth and convex. This soil occurs in all but the southwestern part of the county.

Typically, the surface layer is dark brown loamy sand 6 inches thick. The subsoil is red sandy clay loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Chipola, Dothan, Esto, Faceville, Fuquay, Greenville, Red Bay, and Wicksburg soils and, in some mapped areas, areas of similar soils that have slopes of 0 to 2 percent or 5 to 8 percent. In a few areas the lower part of the subsoil is more sandy than is typical. A few very small areas of moderately well drained soils are in depressions in some mapped areas. The included soils make up less than 15 percent of any one mapped area.

The available water capacity is medium. Permeability is moderate, and runoff is moderate. Natural fertility and the organic matter content are moderately low. The water table is below a depth of 72 inches.

The natural vegetation is longleaf and shortleaf pine and mixed hardwoods including white oak, red oak, live oak, laurel oak, sweetgum, hickory, and dogwood. The understory is native grasses and shrubs including American beautyberry, southern dewberry, smilax, blackberry, panicum, spiny amaranth, poison ivy, ragweed, dogfennel, bitterweed, cudweed, cocklebur, field sandbur, and sparse pineland threeawn.

This soil has moderate limitations for cultivated crops because of the erosion hazard. A wide variety of cultivated crops is well suited. If well managed, such crops as corn and soybeans grow well. Moderate erosion control measures are needed. These measures include a system of well designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least half the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilizer, and lime are needed.

The soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, the improved bahiagrasses, clovers, and other legumes. Yields

are good if the crop is well managed. Fertilization, liming, and controlled grazing are needed to maintain vigorous plants, highest yields, and good soil cover.

This soil has high potential for loblolly, longleaf, and slash pine. Loblolly and slash pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, trench sanitary landfill, local roads and streets, dwellings without basements, and shallow excavations. No special corrective measures are needed. The potential is high for playgrounds and small commercial buildings if the land is shaped and the design of the buildings is appropriate.

Capability subclass IIe.

47—Orangeburg loamy sand, 5 to 8 percent slopes. This is a well drained, sloping, moderately permeable soil of the uplands. Slopes are generally smooth and convex. This soil occurs in all but the southwestern part of the county.

Typically, the surface layer is brown loamy sand 6 inches thick. The subsoil is red sandy clay loam that extends to a depth of 60 inches or more. In some pedons the lower part of the subsoil has red, yellow, or brown mottles.

Included with this soil in mapping are small areas of Chipola, Dothan, Esto, Faceville, Fuquay, Greenville, Red Bay, and Wicksburg soils. Also included in some mapped areas are small areas of similar soils that have slopes of 2 to 5 percent or 8 to 12 percent. The included soils make up less than 15 percent of any one mapped area.

The available water capacity is medium. Permeability is moderate. Runoff is moderately high to high. Natural fertility and the organic matter content are moderately low. The water table is below a depth of 72 inches.

The natural vegetation is longleaf and slash pine and mixed hardwoods, including white oak, red oak, live oak, laurel oak, sweetgum, hickory, dogwood, and yellow-poplar. The understory is native grasses and shrubs, including smilax species, blackberry, southern dewberry, American beautyberry, panicum, poison ivy, ragweed, dogfennel, bitterweed, cudweed, cocklebur, field sandbur, and spiny amaranth.

Limitations are moderate for cultivated crops because of the erosion hazard. If well managed, such crops as corn and soybeans grow well. Intensive erosion control measures are needed. These measures include a system of well designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least two-thirds of the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilizer, and lime are needed.

This soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, the improved bahiagrasses, and clovers and other legumes. Yields are good if the crop is well managed. Fertilization, liming, and controlled grazing are needed to maintain vigorous plants, highest yields, and good soil cover.

The potential is high for loblolly, longleaf, and slash pine. Slash and loblolly pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, local roads and streets, dwellings without basements, and shallow excavations. No special corrective measures are needed. The potential is high for trench sanitary landfill, playgrounds, and small commercial buildings. Land shaping is needed for playgrounds. Land shaping and appropriate building designs are needed for small commercial buildings. Trench sanitary landfills should be properly placed on the slope.

Capability subclass IIIe.

48—Pamlico-Pantego-Rutlege association. This map unit consists of nearly level, very poorly drained soils. These soils occur in a regular and repeating pattern. The landscape is mainly one of drainageways that are frequently flooded. The Pamlico soil is in the lowest parts of the drainageways. The Pantego and Rutlege soils occur at the outer edges or rims of the drainageways. The mapped areas are mostly long and narrow. They range from about 50 to 500 acres. In a few wide depressional areas the pattern of soils is the same but the shape of the soil areas is different. These depressional areas are about 10 to 300 acres. Individual areas of each soil range from about 5 to 50 acres.

The composition of this unit is more variable than that of most other units in the county, but it has been controlled well enough for the expected use of the soils.

The Pamlico soil makes up about 30 percent of the unit. Typically, it is about 36 inches of black muck over very dark grayish brown sand that extends to a depth of 60 inches or more.

The Pamlico soil is ponded for 6 to 9 months in most years. Even when the soil is not under water, the water table is usually within a depth of 24 inches. Only during the driest seasons, usually late in fall, is the water table lower. At such times it can briefly recede to a depth of 40 inches or more. Permeability is moderate, and the available water capacity is very high.

The Pantego soil makes up about 25 percent of the unit. Typically, it has a surface layer of very dark gray sandy loam 18 inches thick. The subsoil, extending to a depth of 72 inches or more, is gray and dark gray sandy clay loam mottled with brownish yellow and yellowish brown.

In most years, the Pantego soil has a water table within a depth of 10 inches for 2 to 4 months and between depths of 10 and 40 inches for 3 to 6 months. Permeability is moderate, and the available water capacity is medium to high.

The Rutlege soil makes up about 25 percent of the unit. Typically, it has a surface layer of black and very

dark grayish brown sandy loam about 23 inches thick. Below this, is light gray loamy sand to a depth of 80 inches or more.

In most years, the Rutlege soil has a water table within a depth of 10 inches for 4 to 6 months. Permeability is rapid, and the available water capacity is low.

Minor soils make up about 20 percent of the unit. Alapaha, Albany, Leefield, Plummer, and Compass soils, in about equal proportion, are the most extensive. The minor soils generally occur at the edges of the mapped areas.

The natural vegetation is sweetbay, titi, blackgum, poplar, red maple, sweetgum, and slash pine. The understory is titi, waxmyrtle, hammoch, sweet azalea, inkberry, and smilax species. Most of the acreage is under native vegetation. Some acreage is cutover areas.

Because of wetness, Pantego and Rutlege soils have severe limitations and Pamlico soils very severe limitations for cultivated crops. Unless water control is intensive, the number of suitable crops is very limited. A well designed and well maintained water control system is essential before such crops as corn and soybeans can be grown. The system should remove excess surface water rapidly after heavy rains and provide rapid internal drainage to the upper layers. Seedbed preparation should include bedding the rows. Regular applications of lime and fertilizers are needed. The crop rotation should include close growing, soil-improving crops at least two-thirds of the time. All crop residues and soil-improving crops should be plowed under.

If well managed, this unit is well suited to pasture and hay crops, and yields are good. Tall fescue, Coastal bermudagrass, bahiagrasses, and white clovers are well suited. Surface ditches are needed to remove excess surface water rapidly during heavy rains. Fertilizer and lime are needed. Grazing should be controlled so that overgrazing does not reduce vitality of the plants.

Pantego soils have very high potential and Rutlege soils have high potential for pine trees, but excess water must be removed before the potential can be reached. Pamlico soils have low potential for pine. Slash and loblolly pine are the most suitable for planting.

The potential is very low for trench sanitary landfills, septic tank absorption fields, playgrounds, local roads and streets, and dwellings without basements. It is low for small commercial buildings and shallow excavations. Water control is needed for all of these uses. For all but sanitary landfills and shallow excavations, filling with suitable material is also needed.

Pantego soil in capability subclass IIIw; Rutlege and Pamlico soils in capability subclass IVw.

49—Pansey fine sandy loam. This poorly drained, nearly level soil occurs on broad flats, in poorly defined drainageways, and in scattered depressions. Slopes are smooth to concave.

Typically, the surface layer is very dark gray fine sandy loam about 6 inches thick. The subsurface layer is light brownish gray fine sandy loam about 13 inches thick. The upper 7 inches of the subsoil is light gray fine sandy loam mottled in shades of yellow, brown, and red. Below this is 27 inches of light gray sandy clay loam mottled in shades of yellow, brown, and red that is about 15 percent plinthite. The lower part of the subsoil, extending to a depth of 80 inches or more, is light gray fine sandy loam highly mottled in shades of yellow, brown, and red.

Included with this soil in mapping are small areas of Alapaha, Albany, Clarendon, Bethera, Compass, Grady, and Leefield soils and small areas of a soil that is similar to this Pansey soil in the upper 40 inches but below 40 inches has a sandy clay or clay subsoil. Also included in some mapped areas are small areas of a soil that is similar to this Pansey soil but has loamy sand within the profile and small areas of similar soils that have slopes of 2 to 4 percent. The included soils make up less than 20 percent of any one mapped area.

The water table is within a depth of 18 inches during wet seasons, usually winter, and most areas are flooded for 1 to 3 months annually. Permeability is moderately rapid in the surface and subsurface layers and is slow in the lower part of the subsoil. Internal drainage is slow; it is impeded by a shallow water table. Natural fertility and the organic matter content are moderate in the surface layers but low below.

The natural vegetation is slash, loblolly, and longleaf pine, sweetgum, blackgum, water oak, red maple, and some cypress. The understory is inkberry, waxmyrtle, sawpalmetto, and abundant pineland threeawn. Most areas of this soil are cutover forest or woodland.

This soil has very severe limitations for cultivated crops because of wetness and poor soil quality. A good water control system is needed before the soil can be made suitable for most crops. It should be designed to remove excess surface water during heavy rains as well as excess internal water. Seedbed preparation should include bedding the rows. Fertilizing, liming, and keeping a close growing, soil-improving crop on the soil at least three-fourths of the time also are important. All crop residue and soil-improving crops should be plowed under.

This soil is moderately well suited to pasture, for example, Coastal bermudagrass and bahiagrass. Surface drainage, fertilization, and lime are needed. Grazing should be controlled so that plants remain vigorous and yields high.

This soil has moderately high potential for loblolly and slash pine, sweetgum, and water oak, but adequate water control is needed to reach the potential. Slash pine, loblolly pine,and sweetgum are the most suitable for planting.

The potential is medium for small commercial buildings and local roads and streets. It is low for septic tank absorption fields, trench sanitary landfill, playgrounds,

buildings without basements, and shallow excavations. Water control and control of flooding are needed for all of these uses. In addition, larger absorption fields are needed for septic tanks.

Capability subclass IVw.

50—Pits. Pits are excavations from which soil and geologic material have been removed, chiefly for use in road construction or for foundations. Included in mapping with pits are waste materials, mostly mixtures of sand, sandy loam, sandy clay loam, and clayey material, that have been piled or scattered around the edges of the pits. Pits, locally called borrow pits, are mostly small, but a few are large. Many have been abandoned. Pits have little or no value for agriculture or for growing pine trees.

Not placed in a capability subclass.

51—Plummer sand. This poorly drained, nearly level soil occurs in low lying areas and in poorly defined drainageways throughout the county. Slopes are 0 to 2 percent. They are smooth to concave.

Typically, the surface and subsurface layers are sand about 56 inches thick. In sequence from the top, 8 inches is dark gray, 4 inches is dark grayish brown, 12 inches is gray, and the lower 32 inches is light gray. The subsoil is light gray sandy clay loam to a depth of more than 80 inches. Few to many mottles in shades of yellow, brown, and red occur in the lower part of the subsoil.

Included with this soil in mapping are small areas of Albany, Alapaha, Blanton, Compass, Leefield, and Pansey soils. Also included are small areas of soils that are similar to this Plummer soil but that have a subsoil within a depth of 20 to 40 inches or that have a sandy clay subsoil at a depth of 70 to 80 inches. The included soils make up less than 20 percent of any one mapped area.

In most years, the water table is within a depth of 10 inches for 3 to 6 months and most areas are flooded for brief periods. Permeability is moderately rapid in the sandy surface and subsurface layers and moderate in the subsoil. Internal drainage is slow; it is impeded by the shallow water table. Natural fertility and the organic matter content are moderate in the top 10 inches but low below 10 inches.

The native vegetation is mostly slash pine, longleaf pine, sweetgum, blackgum, water oak, and cypress and an understory of inkberry, waxmyrtle, sea myrtle, swamp grass, pitcher plants, and pineland threeawn. Most areas are cutover forest or woodland. A few are cleared and cultivated in dry years, and a few are improved pasture.

This soil has very severe limitations for cultivated crops because of wetness and very poor soil qualities. A good water control system is needed before the soil can be made suitable for cultivated crops. The system should be designed to remove excess surface and subsurface water during heavy rains. Seedbed preparation should include bedding the rows. Row crops should be rotated with close growing crops and the close growing crops kept on the soil at least three-fourths of the time. All crop residue and cover crops should be plowed under. Regular applications of fertilizer and lime are needed.

The soil is only fair as pasture. Most improved grasses and legumes are poorly suited. Even under good management, which includes water control, controlled grazing, fertilization, and liming, the yields of pasture grasses are only poor to moderate.

This soil has high potential for slash, longleaf, and loblolly pine, but adequate drainage or bedding and mounding are needed if the potential is to be reached. Equipment limitations and seedling mortality are the main management concerns. Loblolly and slash pine are the most suitable for planting.

If water is controlled, the potential is medium for small commercial buildings, low for septic tank absorption fields, trench sanitary landfill, local roads and streets, and dwellings without basements, and very low for playgrounds and shallow excavations. In addition, septic tank absorption fields should be mounded. Surface stabilization is needed for playgrounds, and the side walls of shallow excavations should be shored.

Capability subclass IVw.

52—Plummer sand, depressional. This poorly drained, nearly level soil is in depressions throughout the county. Slopes are concave. They are 0 to 2 percent.

Typically, the surface and subsurface layers are sand about 54 inches thick. In sequence from the top, 8 inches is dark gray, 8 inches is dark grayish brown, 6 inches is gray, and the lower 32 inches is light gray. The subsoil is light gray sandy clay loam to a depth of 72 inches or more. Few to many mottles in shades of yellow, brown, and red occur in the lower part.

Included with this soil in mapping are small areas of Albany, Alapaha, Bethera, Grady, and Pansey soils. Also included are small areas of soils that have a subsoil within a depth of 20 to 40 inches or a thick dark surface layer and areas of a soil that is similar to this Plummer soil but has lumps of sandy clay in the subsoil, generally at a depth of 70 to 80 inches. The included soils make up less than 20 percent of any one mapped area.

This soil is ponded for 6 to 12 months in most years. Permeability is moderately rapid in the surface and subsurface layers and moderate in the subsoil. Internal drainage is slow; it is impeded by the shallow water table. Natural fertility and the organic matter content are moderate in the top 10 inches but low below 10 inches.

The native vegetation is mostly blackgum and cypress and an understory of swamp grass, pitcher plants, and pineland threeawn. Most areas are in native vegetation.

This soil is not suitable for cultivation or improved pasture. The ponded water inhibits cultivation and root development. These low-lying depressional areas are

generally lower than surrounding soils, and drainage is complex.

If water can be controlled, this soil has high potential for slash, longleaf, and loblolly pine. Loblolly and slash pine are the most suitable for planting.

The potential is very low for septic tank absorption fields, trench sanitary landfill, playgrounds, local roads and streets, buildings without basements, and shallow excavations. Protection from ponding is needed for all of these uses. In addition, mounding and backfilling with suitable soil material are needed for septic tank absorption fields. Filling is also needed for playgrounds, small commercial buildings, and local roads and streets. Shoring of the side walls is needed for shallow excavations.

Capability subclass VIIw.

53—Red Bay fine sandy loam, 0 to 2 percent slopes. This well drained, nearly level, deep soil is on uplands. Slopes are smooth to slightly concave.

Typically, the surface layer is dark reddish brown fine sandy loam 10 inches thick. The subsoil is dark red sandy clay loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Chipola, Faceville, Greenville, and Orangeburg soils and a few small areas of similar soils that have slopes of 2 to 5 percent. Also included are a few small areas of moderately well drained Iuka soils in depressions. In some pedons, few to common small iron concretions occur throughout the profile. The included soils make up less than 15 percent of any one mapped area.

This soil has medium available water capacity, moderate permeability, and slow surface runoff. Natural fertility and the organic matter content are moderate. The water table is below depths of 72 inches.

The natural vegetation is longleaf, shortleaf, and slash pine and mixed hardwoods. The hardwoods include white oak, red oak, laurel oak, live oak, hickory, dogwood, sweetgum, and persimmon. The understory is native grasses and shrubs including American beautyberry, southern dewberry, blackberry, smilax, panicum, ragweed, poison ivy, dogfennel, bitterweed, cudweed, field sandbur, and sparse pineland threeawn.

This soil has few limitations for cultivated crops. A wide variety of cultivated crops is well suited. Corn, soybeans, peanuts, and tobacco grow well without special erosion control or water control measures. Good seedbed preparation, fertilization, liming, and crop rotation are needed to keep the soil in good condition. Cover crops should be alternated with row crops. All crop residue should be plowed under.

The soil is well suited to pasture and hay crops. If well managed, tall fescue, Coastal bermudagrass, the improved bahiagrasses, clovers, and other legumes grow well. Fertilizer, lime, and controlled grazing are needed to maintain vigorous plants, yields, and good soil cover.

This soil has high potential for loblolly, longleaf, and slash pine. Slash and loblolly pine are the most suitable for planting.

This soil has very high potential for septic tank absorption fields, trench sanitary landfill, small commercial buildings, local roads and streets, dwellings without basements, and shallow excavations.

Capability class I.

54—Red Bay fine sandy loam, 2 to 5 percent slopes. This well drained, gently sloping soil is on uplands. Slopes are smooth to convex.

Typically, the surface layer is dark reddish brown fine sandy loam about 9 inches thick. The subsoil is dark red sandy clay loam that extends to a depth of 76 inches or more.

Included with this soil in mapping are small areas of Chipola, Faceville, Greenville, and Orangeburg soils and a few small areas of similar soils that have slopes of 1 to 2 percent or 5 to 8 percent. Also included in some mapped areas are a few small areas of moderately well drained Iuka soils in depressions. The included soils make up less than 15 percent of any one mapped area.

The available water capacity is medium. Permeability is moderate, and surface runoff is moderate. Natural fertility and the organic matter content are moderate in the top 10 inches and moderately low below 10 inches.

The natural vegetation is longleaf, shortleaf, and slash pine and mixed hardwoods. The hardwoods include white oak, red oak, laurel oak, sweetgum, hickory, dogwood, and persimmon. The understory is native grasses and shrubs including American beautyberry, southern dewberry, blackberry, smilax, panicum, poison ivy, dogfennel, cudweed, field sandbur, cocklebur, and sparse pineland threeawn.

This soil has moderate limitations for cultivated crops because of the erosion hazard. If well managed, such crops as corn and soybeans grow well. Moderate erosion control measures are needed. These measures include a system of well designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least half the time. The soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and lime are needed.

The soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, the improved bahiagrasses, clovers, and other legumes. Yields are good if the crop is well managed. Fertilization, liming, and controlled grazing are needed to maintain vigorous plants, highest yields, and good soil cover.

This soil has high potential for loblolly, longleaf, and slash pine. Loblolly and slash pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, trench sanitary landfill, small commercial buildings,

local roads and streets, dwellings without basements, and shallow excavations.

Capability subclass IIe.

55—Red Bay fine sandy loam, 5 to 8 percent slopes. This well drained, sloping, deep soil is on uplands. Slopes are generally smooth and convex.

Typically, the surface layer is dark reddish brown fine sandy loam 6 inches thick. The subsoil is dark red sandy clay loam that extends to a depth of 60 inches or more.

Included with this soil in mapping are small areas of Chipola, Faceville, Greenville, and Orangeburg soils, small areas of similar soils that have slopes of 2 to 5 percent, and a few small areas where slopes are 8 to 12 percent. The included soils make up less than 15 percent of any one mapped area.

This soil has medium available water capacity and moderate permeability. Surface runoff is moderately high. Natural fertility and the organic matter content are moderately low.

The natural vegetation is longleaf, shortleaf, and slash pine and mixed hardwoods. The hardwoods include white oak, red oak, live oak, laurel oak, hickory, dogwood, and sweetgum. The understory is American beautyberry, blackberry, southern dewberry, smilax, poison ivy, dogfennel, cudweed, ragweed, and field sandbur.

This soil has moderate limitations for cultivated crops because of the erosion hazard. If well managed, such crops as corn and soybeans grow well. Intensive erosion control is needed.

Measures needed are a system of well designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least two-thirds of the time. The soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and lime are needed.

The soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, the improved bahiagrasses, and clovers and other legumes. Yields are good if the crop is well managed. Fertilizers, lime, and controlled grazing are needed to maintain vigorous plants, highest yields, and good soil cover.

This soil has high potential for loblolly, longleaf, and slash pine. Slash and loblolly pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, trench sanitary landfill, local roads and streets, buildings without basements, and shallow excavations. No corrective measures are needed. The potential is high for playgrounds if the land is shaped and the surface stabilized and high for small commercial buildings if the land is shaped and an appropriate building design is used.

Capability subclass IIIe.

56—Rutlege loamy sand. This very poorly drained soil occurs in nearly level or slightly depressional areas and along drainageways. Slopes are smooth to concave.

Typically, the surface layer is loamy sand about 23 inches thick. The upper 11 inches is black, and the lower 12 inches is very dark gray. The underlying material is light gray sand to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Albany, Alapaha, Clarendon, Dorovan, Leefield, Pamlico, Pantego, Plummer, and Compass soils. Also included in a few mapped areas are soils that are similar to this Rutlege soil but have a subsoil of sandy loam and small areas of similar soils that have slopes of 2 to 5 percent. The included soils make up less than 20 percent of any one mapped area.

In most years, the water table is within a depth of 10 inches for 4 to 6 months and most drainageways are flooded for 2 to 6 months. The available water capacity is low. Permeability is rapid. Internal drainage is very slow; it is impeded by the shallow water table. Natural fertility and the organic matter are high in the top 11 inches, moderate to a depth of about 23 inches, and low below 23 inches.

The natural vegetation is sweetbay, titi, blackgum, water oak, inkberry, waxmyrtle, and abundant reeds and pineland threeawn.

This soil has very severe limitations for cultivated crops because of wetness. A well designed and well maintained water control system is needed. If water control is adequate, crops such as corn and soybeans can be grown. The water control system should remove excess surface water rapidly after heavy rains and provide rapid internal drainage to the upper layers. Seedbed preparation should include bedding the rows. Regular applications of lime and fertilizer are needed. The crop rotation should include close growing, soil-improving crops at least two-thirds of the time. All crop residue and soil-improving crops should be plowed under.

If well managed, the soil is well suited to pasture and hay crops. Tall fescue, Coastal bermudagrass, bahiagrass, and white clovers are well suited. Surface ditches are needed to remove excess surface water rapidly during heavy rains. Fertilizer and lime are needed. Grazing should be controlled to prevent overgrazing from reducing the vitality of the plants.

This soil has high potential for loblolly and slash pine and for sweetgum and water tupelo. Equipment limitations and seedling mortality caused by excessive wetness are the main management concerns. Adequate water control is needed before trees can be planted. Loblolly pine, slash pine, sweetgum, and American sycamore are the most suitable for planting.

This soil has low potential for septic tank absorption fields, small commercial buildings, and local roads and streets. Water control and filling are needed. In addition, mounding is needed for septic tank absorption fields. The potential is very low for trench sanitary landfill, play-

grounds, buildings without basements, and shallow excavations, even if water is controlled. Trench sanitary landfills should be sealed or lined with impervious material. For playgrounds and dwellings without basements filling is needed. For shallow excavations the side walls should be shored.

Capability subclass IVw.

57—Tifton loamy sand, 2 to 5 percent slopes. This well drained, gently sloping soil is on uplands. Slopes are smooth to concave.

Typically, the surface layer is dark grayish brown loamy sand about 12 inches thick. The subsurface layer is light yellowish brown loamy sand about 5 inches thick. The subsoil, in sequence from the top, is 3 inches of brownish yellow fine sandy loam, 11 inches of yellowish brown sandy clay loam, 24 inches of yellowish brown sandy clay mottled with red, brown, yellow, and gray where plinthite is common, and 13 inches of highly mottled sandy clay loam. The surface and subsurface layers and the upper part of the subsoil contain numerous ironstone nodules.

Included with this soil in mapping are small areas of Dothan, Esto, Faceville, Fuquay, Orangeburg, and Compass soils. Also included are small areas of soils that have similar properties but have slopes of 0 to 2 percent or 5 to 8 percent. The included soils make up less than 15 percent of any one mapped area.

Usually the water table is below a depth of 6 feet. After heavy rainfall it is usually perched above the lower part of the subsoil for 1 to 6 days. The available water capacity is medium. Permeability is moderate, and runoff is low. Natural fertility and the organic matter content are moderately low.

The natural vegetation is longleaf and slash pine and mixed hardwoods, including white oak, live oak, laurel oak, sweetgum, hickory, dogwood, and persimmon. The understory is native grasses and shrubs, including huckleberry, briers, and pineland threeawn.

This soil has moderate limitations for cultivated crops because of the erosion hazard. If well managed, such crops as corn and soybeans grow well. Moderate erosion control is needed. The measures needed include a system of well designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops at least half the time. Soil-improving cover crops and all crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and lime are needed.

The soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, the improved bahiagrasses, clovers, and other legumes. Yields are good if the crop is well managed. Fertilization, lime, and controlled grazing are needed to maintain vigorous plants, highest yields, and good soil cover.

This soil has high potential for longleaf, loblolly, and slash pine. Loblolly and slash pine are the most suitable for planting.

The potential is very high for trench sanitary landfill, local roads and streets, buildings without basements, and shallow excavations. No corrective measures are needed. The potential is high for septic tank absorption fields, playgrounds, and small commercial buildings. A larger absorption field is needed for septic tanks; land shaping is needed for playgrounds; and land shaping and an appropriate building design are needed for small commercial buildings.

Capability subclass IIe.

58—Tifton loamy sand, 5 to 8 percent slopes. This well drained, sloping soil is on uplands. It is on side slopes and hillsides along drainageways and around depressions and sinks. Slopes are generally long and smooth. Some are convex.

Typically, the surface layer is dark grayish brown loamy sand 8 inches thick. The subsurface layer is yellowish brown loamy sand about 3 inches thick. The upper 15 inches of the subsoil is yellowish brown sandy clay loam, and the lower part of the subsoil is yellowish brown sandy clay mottled with red, brown, yellow, and gray. Plinthite is common in this layer. The surface and subsurface layers and the upper part of the subsoil contain numerous ironstone nodules.

Included with this soil in mapping are small areas of Dothan, Esto, Faceville, Fuquay, Orangeburg, and Compass soils. Also included are small areas of similar soils that have slopes of 2 to 5 percent. The included soils make up less than 15 percent of any one mapped area.

Usually, the water table is below a depth of 6 feet. After heavy rainfall, it is usually perched above the lower part of the subsoil for 1 to 4 days. The available water capacity is medium. Permeability is moderate, and surface runoff is medium. Natural fertility and the organic matter content are moderately low.

The natural vegetation is longleaf pine, slash pine, and mixed hardwoods, including white oak, red oak, black oak, laurel oak, live oak, water oak, dogwood, hickory, sweetgum, and persimmon. The understory is native grasses and shrubs, including huckleberry, briers, and pineland threeawn.

This soil has moderate limitations for cultivated crops because of the erosion hazard. If well managed, such crops as corn and soybeans grow well. Intensive erosion control is needed. The measures needed include a system of well designed terraces with stabilized outlets and contour cultivation of row crops in alternate strips with cover crops. The crop rotation should include cover crops. All crop residue should be left on the soil or plowed under. For maximum yields, good seedbed preparation, fertilization, and liming are needed.

The soil is well suited to pasture and hay crops, for example, tall fescue, Coastal bermudagrass, and the im-

proved bahiagrasses and clovers and other legumes. Yields are good if the crop is well managed. Fertilization, liming, and controlled grazing are needed to maintain vigorous plants, highest yields, and good soil cover.

This soil has high potential for longleaf, loblolly, and slash pine. Slash and loblolly pine are the most suitable for planting.

The potential is very high for local roads and streets, dwellings without basements, and shallow excavations. No special corrective measures are needed. The potential is high for septic tank absorption fields, trench sanitary landfill, playgrounds, and small commercial buildings. Larger absorption fields are needed for septic tanks. Trench sanitary landfills should be placed correctly on the slope. For playgrounds, land shaping is needed, and for small commercial buildings, land shaping and an appropriate building design are needed.

Capability subclass IIIe.

59—Troup sand, 0 to 5 percent slopes. This well drained, nearly level to gently sloping soil occurs in broad upland areas. Slopes are smooth to convex. Areas are moderate to large in size.

Typically, the surface layer is light yellowish brown sand about 5 inches thick. The subsurface layers are sand to a depth of 57 inches. The upper 20 inches is brownish yellow; the next 22 inches is pale brown; and the lower 10 inches is reddish yellow. The subsoil is yellowish red sandy loam. It extends to a depth of 75 inches or more.

Included with this soil in mapping are small areas of Blanton, Bonifay, Chipola, Esto, Fuquay, Lakeland, Orangeburg, and Wicksburg soils. Also included are small areas of similar soils that have slopes of 5 to 8 percent. The included soils make up less than 15 percent of any one mapped area.

The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility and the organic content are low throughout the profile. The water table is at a depth of more than 6 feet. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil.

The natural vegetation is slash pine, longleaf pine, live oak, post oak, red oak, huckleberry, dogwood, and an understory of native shrubs and pineland threeawn.

This soil has severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of crops and reduce potential yields. Row crops should be planted on the contour in alternating strips with close growing, soil-improving crops. The crop rotation should include close growing, soil-improving crops at least two-thirds of the time. The soil-improving crops and the residue of all other crops should be plowed under. All crops should be limed and fertilized. If irrigation water is readily available, irrigation of high value crops such as watermelons and tobacco is usually feasible.

This soil is moderately well suited to improved pasture. Such deep rooted plants as Coastal bermudagrass and improved bahiagrass are well suited. If the crop is limed and fertilized, the yields and the ground cover produced are good. Controlled grazing is needed to maintain vigorous plants for maximum yields. Extended severe drought occasionally greatly reduces yields.

This soil has moderately high potential for longleaf, loblolly, and slash pine. Equipment limitations and seedling mortality are the main management concerns. Loblolly and slash pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, small commercial buildings, local roads and streets, and dwellings without basements. No special corrective measures are needed. The potential is high for sanitary landfill; sealing or lining the trench with impervious material is needed. The potential is medium for playgrounds if the surface is stabilized and the land shaped. It is medium for shallow excavations if the side walls are shored.

Capability subclass IIIs.

60—Troup sand, 5 to 8 percent slopes. This well drained, sloping soil occurs on the uplands, generally along drainageways. Slopes are smooth to convex. The size of the areas is moderate to large.

Typically, the surface layer is light yellowish brown sand about 7 inches thick. The subsurface layer is sand to a depth of 55 inches. The upper 18 inches is brownish yellow; the next 20 inches is pale brown; and the lower 10 inches is reddish yellow. The subsoil is yellowish red sandy loam that extends to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Blanton, Bonifay, Chipola, Esto, Fuquay, Lakeland, Orangeburg, and Wicksburg soils. Also included are small areas of similar soils that have slopes of less than 5 percent or of 8 to 12 percent. The included soils make up less than 15 percent of any one mapped area.

The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility and the organic content are low throughout. The water table is at a depth of more than 6 feet. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil.

The natural vegetation is slash pine, longleaf pine, live oak, post oak, red oak, huckleberry, dogwood, and an understory of native shrubs and pineland threeawn. Most areas are cutover woodland. Some have been cleared for crops or bahiagrass improved pasture.

This soil has very severe limitations for cultivated crops. Droughtiness and rapid leaching of plant nutrients limit the choice of plants and reduce potential yields. Row crops should be planted on the contour in alternating strips with close growing, soil-improving crops. The crop rotation should include close growing, soil-improving crops at least three-fourths of the time. The soil-improv-

ing crops and the residue of all other crops should be plowed under. All crops should be limed and fertilized.

This soil is moderately suited to improved pasture. Deep rooted plants, such as Coastal bermudagrass and improved bahiagrasses, are well suited. If the crops are limed and fertilized, they grow well and produce good ground cover. Controlled grazing is needed to maintain vigorous plants for maximum yields. Extended severe drought occasionally greatly reduces yields.

This soil has moderately high potential for slash, longleaf, and loblolly pine. Equipment limitations and seedling mortality are the main management concerns. Loblolly and slash pine are the most suitable for planting.

The potential is very high for septic tank absorption fields, local roads and streets, and buildings without basements. No corrective measures are needed. The potential is high for trench sanitary landfill, but sealing or lining with impervious material is needed. If the land is shaped and an appropriate building design is used, the potential is high for small commercial buildings. It is medium for playgrounds if the surface is stabilized, and the land shaped and medium for shallow excavations if the side walls are shored.

Capability subclass VIe.

61—Troup sand, 8 to 12 percent slopes. This well drained, strongly sloping soil generally occurs on hillsides along drainageways on uplands or around sinks. Slopes are smooth to concave. Areas are generally long and narrow, but around the sinks they are circular.

Typically, the surface layer is light yellowish brown sand about 3 inches thick. The subsurface layer is sand to a depth of 47 inches. The upper 16 inches is brownish yellow; the next 18 inches is pale brown; and the lower 10 inches is reddish yellow. The subsoil is yellowish red sandy loam that extends to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Blanton, Bonifay, Chipola, Esto, Fuquay, Lakeland, Orangeburg, and Wicksburg soils. Also included are small areas of similar soils that have slopes of 5 to 8 percent or of more than 12 percent. The included soils make up less than 15 percent of any one mapped area.

The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility and the organic matter content are low throughout the profile. The water table is at a depth of more than 6 feet. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil.

The natural vegetation is slash pine, longleaf pine, live oak, post oak, red oak, huckleberry, dogwood, and an understory of native shrubs and pineland threeawn. Most areas are cutover woodland. Some have been cleared for crops or bahiagrass improved pasture.

This soil is not suitable for cultivated crops. It is poorly suited to improved pasture, but deep rooted plants, such as Coastal bermudagrass and improved bahiagrass, are well suited. They grow well and produce good ground cover if they are limed and fertilized, but grazing must be greatly restricted so that vigorous plants, adequate growth, and ground cover for soil protection are maintained.

This soil has moderately high potential for slash, longleaf, and loblolly pine. Equipment limitations and seedling mortality are the main management concerns. Loblolly and slash pine are the most suitable for planting.

The potential is very high for local roads and streets. It is high for septic tank absorption fields, but the field must be parallel to the slope. The potential is high for small commercial buildings and buildings without basements, but land shaping and an appropriate building design are needed. The potential is medium for trench sanitary landfill if the trench is sealed or lined with impervious soil material. The potential is low for playgrounds and shallow excavations. Land shaping and surface stabilization are needed for playgrounds, and shoring of the side walls is needed for shallow excavations.

Capability subclass VIs.

62—Urban land. More than 85 percent of the areas mapped as Urban land are covered by buildings, runways, taxi strips, large parking lots, industrial buildings, streets, and the facilities of the Marianna Airport. The unoccupied areas, mostly lawns, are Blanton, Dothan, Esto, Faceville, Chipola, Orangeburg, Troup, and Wicksburg soils. The tracts are so small that they could not be shown separately at the scale of mapping selected.

Not placed in a capability subclass.

63—Wicksburg-Esto complex, 2 to 5 percent slopes. This map unit consists of small areas of gently sloping, well drained Wicksburg and Esto soils, generally on small rounded knolls. Areas are about 3 to 15 acres. Individual areas of each soil range from about 1/2 to 3 acres. They are so intermingled that they could not be shown separately at the scale selected for mapping.

The Wicksburg soil makes up about 45 percent of the unit. Typically, the surface layer is about 8 inches of grayish brown loamy sand. The subsurface layer is light yellowish brown loamy sand about 18 inches thick. The subsoil extends to depths of 65 inches or more. The upper 6 inches is yellowish brown sandy clay loam. The lower part is reddish yellow sandy clay mottled with gray, brown, yellow, and red.

The Wicksburg soil has rapid permeability in the surface and subsurface layers and slow permeability in the subsoil. Surface runoff is slow. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. Natural fertility and the organic matter content are low. The water table is below a depth of 72 inches.

The Esto soil makes up about 35 percent of the unit. Typically, the surface layer is grayish brown loamy sand about 3 inches thick. The subsurface layer is brown

loamy sand about 9 inches thick. The upper 6 inches of the subsoil is reddish yellow sandy clay. The next 18 inches of the subsoil is light reddish brown clay that has few to common, fine and distinct, light gray and yellowish brown mottles. The lower part of the subsoil, extending to a depth of 60 inches or more, is highly mottled yellow, brown, gray, and red clay.

The Esto soil has rapid permeability in the surface and subsurface layers and slow permeability in the subsoil. Natural fertility and the organic matter content are low throughout. The available water capacity is low in the surface and subsurface layers and medium in the subsoil. The water table is below a depth of 72 inches.

Minor soils make up about 20 percent of the unit. Small areas of Blanton, Bonifay, Chipola, Dothan, Faceville, Fuquay, Orangeburg, and Troup soils are included in most mapped areas. Not all of the minor soils are in each mapped area.

The natural vegetation is loblolly, slash, and longleaf pine, white oak, red oak, laurel oak, live oak, water oak, hickory, dogwood, persimmon, and sweetgum. The understory is various species of smilax, American beautyberry, greenbrier, southern dewberry, poison ivy, and sparse pineland threeawn.

The Wicksburg soil has moderate limitations and Esto soil severe limitations for cultivated crops. The Wicksburg soil tends to be droughty, and there is a hazard of erosion on the Esto soil. Such crops as corn, soybeans, oats, and peanuts are fairly well suited. In areas of Esto soil, intensive erosion control measures are needed. Close growing crops should be kept on the land at least half of the time in areas of Wicksburg soil and two-thirds of the time in areas of Esto soil. All cover crop residue should be left on the land or plowed under. For best yields, good seedbed preparation, fertilization, and liming are needed.

These soils are well suited to pasture and hay crops. Such plants as tall fescue, Coastal bermudagrass, and bahiagrass are moderately well suited. Fertilizer and lime are needed for best growth.

These soils have moderately high potential for slash, loblolly, and longleaf pine. In areas of Wicksburg soil, seedling mortality and equipment limitations are the main management concerns. Loblolly and slash pine are the most suitable for planting.

The potential is very high for sanitary landfill and shallow excavations. No corrective measures are needed. The potential is high for small commercial buildings, but an appropriate building design, additional structural strength, and larger footings and foundations are needed. The potential is also high for dwellings without basements, but additional structural strength of footings and foundations is needed. The potential is medium for septic tank absorption fields. A larger absorption field is needed. If the surface is stabilized, the potential for playgrounds is medium. It is medium for local roads and streets if structural strength is increased.

Wicksburg soil in capability subclass IIs; Esto soil in capability subclass IIIe.

64—Yonges-Herod association. This map unit consists of nearly level, poorly drained Yonges and Herod soils. These soils occur in a regular and repeating pattern on the flood plains of the Chipola River and the large creeks and streams that flow into the Chipola River. The Yonges soil is on low ridges. The Herod soil is at slightly lower elevations. Slopes are 0 to 2 percent. Areas are generally narrow and long and follow streambeds and flood plains. They range from about 100 to more than 1,000 acres. Individual areas of each soil range from 50 to 150 acres. They are large enough to be mapped separately, but considering the present and predicted use, they are mapped as one unit.

The composition of this unit is more variable than that of most other units in the county, but it has been controlled well enough for the expected use of the soils.

The Yonges soil makes up about 40 percent of the unit. Typically, it has a 4-inch surface layer of dark grayish brown fine sandy loam and a 4-inch subsurface layer of light brownish gray fine sandy loam. The subsoil extends to a depth of about 62 inches. The upper 11 inches is light brownish gray sandy clay loam, and the lower 43 inches is light gray sandy clay. Mottles are brown and yellow. The substratum extends to 84 inches or more. It is light gray sandy clay loam with pockets of coarser material.

In most years, the Yonges soil has a water table within a depth of 10 inches for about 2 months and at depths of 10 to 20 inches for 4 to 6 months. It is subject to occasional flooding. Permeability is moderately slow in the lower part of the subsoil. The available water capacity is medium.

The Herod soil makes up about 35 percent of the unit. Typically, it has a dark grayish brown sandy loam surface layer about 5 inches thick. Below this is about 7 inches of light gray sandy loam and 10 inches of light brownish gray sandy loam. Between depths of 22 and 56 inches is light gray sandy clay loam, which is underlain by light gray sandy loam that extends to 62 inches or more. Thin strata of coarser or finer textured material occur throughout the soil. The soil is mottled with brown and yellow.

The Herod soil has a water table within a depth of 10 inches for 3 to 5 months in most years. It is frequently flooded. Permeability is moderate. The available water capacity is medium.

Minor soils make up about 25 percent of the unit. Alapaha, Bethera, Hornsville, Leefield, Pansey, and Plummer soils, in about equal proportion, are the most extensive.

These soils are not suited to crops. They are moderately well suited to improved pasture. Flooding and wetness, the major limitations, are difficult to overcome. If water can be controlled and the soils well managed, the potential is high for good quality pasture.

These soils have very high potential for loblolly pine, eastern cottonwood, sweetgum, and water oak, but water control is needed. Severe equipment limitations and seedling mortality are the main limiting factors. Loblolly and slash pine and sweetgum are the most suitable for planting.

The potential is low for septic tank absorption fields, trench sanitary landfills, playgrounds, and shallow excavations. It is very low for small commercial buildings, dwellings without basements, and local roads and streets. Water control and protection from flooding are needed for all of these uses. In addition, a larger absorption field is needed for septic tanks. Additional structural strength is needed for local roads and streets.

Capability subclass Vw.

Use and management of the soils

The soil survey is a detailed inventory and evaluation of the most basic resource of the survey area—the soil. It is useful in adjusting land use, including urbanization, to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in uses of the land.

While a soil survey is in progress, soil scientists, conservationists, engineers, and others keep extensive notes about the nature of the soils and about unique aspects of behavior of the soils. These notes include data on erosion, drought damage to specific crops, yield estimates, flooding, the functioning of septic tank disposal systems, and other factors affecting the productivity, potential, and limitations of the soils under various uses and management. In this way, field experience and measured data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section is useful in planning use and management of soils for crops and pasture, rangeland, and woodland; as sites for buildings, highways and other transportation systems, sanitary facilities, and parks and other recreation facilities; and for wildlife habitat. From the data presented, the potential of each soil for specified land uses can be determined, soil limitations to these land uses can be identified, and costly failures in houses and other structures, caused by unfavorable soil properties, can be avoided. A site where soil properties are favorable can be selected, or practices that will overcome the soil limitations can be planned.

Planners and others using the soil survey can evaluate the impact of specific land uses on the overall productivity of the survey area or other broad planning area and on the environment. Productivity and the environment are closely related to the nature of the soil. Plans should maintain or create a land-use pattern in harmony with the natural soil.

Contractors can find information that is useful in locating sources of sand and gravel, roadfill, and topsoil. Other information indicates the presence of bedrock, wetness, or very firm soil horizons that cause difficulty in excavation.

Health officials, highway officials, engineers, and many other specialists also can find useful information in this soil survey. The safe disposal of wastes, for example, is closely related to properties of the soil. Pavements, sidewalks, campsites, playgrounds, lawns, and trees and shrubs are influenced by the nature of the soil.

Crops and pasture

John Griffin, state conservation agronomist, Soil Conservation Service, helped prepare this section.

The major management concerns in the use of the soils for crops and pasture are described in this section. In addition, the crops or pasture plants best suited to the soil, including some not commonly grown in the survey area, are discussed; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are presented for each soil.

This section provides information about the overall agricultural potential of the survey area and about the management practices that are needed. The information is useful to equipment dealers, land improvement contractors, fertilizer companies, processing companies, planners, conservationists, and others. For each kind of soil, information about management is presented in the section "Soil maps for detailed planning." Planners of management systems for individual fields or farms should also consider the detailed information given in the description of each soil.

More than 215,000 acres in the survey area was used for crops and pasture in 1974, according to the Jackson County Extension Service Annual Report and the Soil Conservation Service Now On The Land Records of 1975. Of this total, 99,280 acres was permanent pasture; 116,600 acres was in row crops, mainly corn, soybeans, and peanuts; and 5,000 acres was in close grown crops, mainly wheat and oats. The rest was idle cropland.

The potential of the soils in Jackson County is good for increased production of food. About 139,000 acres of potentially good cropland is currently used as woodland, and about 25,000 acres as pasture. In addition to the reserve productive capacity represented by this land, food production could also be increased considerably by extending the latest crop production technology to all cropland in the county. This soil survey can greatly facilitate the application of such technology.

The acreage in crops and pasture has remained constant, but the acreage in forest has gradually been decreasing as more land is used for urban development. In 1967 an estimated 17,500 acres was urban and built up land; this figure has been growing at the rate of about 500 acres per year. The use of this soil survey in making

land use decisions that will influence the future role of farming in the county is discussed under the heading "General soil map for broad land use planning."

Soil erosion is the major soil problem on about two-thirds of the cropland and pasture in Jackson County. If the slope is more than 2 percent, erosion is a hazard. Albany, Hornsville, and Compass soils, for example, have slopes of 2 to 5 percent and an additional problem of wetness.

Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is damaging on soils that have a clayey subsoil, such as the Esto, Faceville, and Greenville soils. Second, soil erosion on farmland results in sediment entering streams. Controlling erosion minimizes the pollution of streams by sediment and improves quality of water for municipal use, for recreation, and for fish and wildlife.

In many sloping fields, preparing a good seedbed and tilling are difficult on clayey spots because the original friable surface soil has been eroded away. Such spots are common in areas of the moderately eroded Esto, Faceville, and Greenville soils.

Erosion control provides protective surface cover, reduces runoff, and increases infiltration. A cropping system that keeps a plant cover on the soil for extended periods can hold soil erosion losses to amounts that will not reduce the productive capacity of the soils. On livestock farms, which require pasture and hay, the legume and grass forage crops in the cropping system reduce erosion on sloping land and also provide nitrogen and improve tilth for the following crop.

Minimizing tillage and leaving crop residue on the surface increase infiltration and reduce the hazards of runoff and erosion. These practices can be adapted to most soils in the survey area but are more difficult to use successfully on the eroded soils and on the soils that have a clayey surface layer, such as Esto, Faceville, and Greenville soils. No tillage for corn is effective in reducing erosion on sloping land and can be adapted to most soils in the survey area. It is more difficult to practice successfully on the soils that have a clayey surface layer.

Terraces and diversions reduce the length of slope and reduce runoff and the risk of erosion. They are more practical on deep, well drained soils that have regular slopes. Dothan, Esto, Faceville, Fuquay, Greenville, Orangeburg, Redbay, Compass, and Tifton soils, for example, are suitable for terraces. The other soils are less suitable for terraces and diversions because of irregular slopes or because of excessive wetness in the clayey subsoil that would be exposed in terrace channels.

Contouring is a widespread erosion control practice in the survey area. It can be best adapted to soils that have smooth uniform slopes, including most areas of the Dothan, Esto, Faceville, Fuquay, Greenville, Orangeburg, Redbay, Compass, and Tifton soils.

Soil blowing is a slight hazard on the sandy Blanton, Bonifay, Lakeland, Chipola, and Troup soils. Soil blowing can damage tender crops in a few hours if winds are strong and the soils are dry and bare of vegetation or surface mulch. Maintaining a plant cover and a surface mulch minimizes the risk of soil blowing on these soils. Windbreaks of suitable shrubs and trees are effective in reducing wind erosion hazard.

Information on the design of erosion control practices for each kind of soil can be found in the Technical Guide, available in local offices of the Soil Conservation Service.

Soil drainage is the major management need on about one-fifth of the acreage used for crops and pasture in the survey area. Some soils are naturally so wet that the production of crops common to the area is generally not possible. Examples are the poorly drained Alapaha, Grady, Pansey, and Plummer soils, which make up about 35,000 acres in the survey area.

Unless artificially drained, the somewhat poorly drained soils are so wet that crops are damaged in most years. In this category are the Clarendon, Duplin, and Leefield soils, which make up about 30,000 acres. Albany, Hornsville, and Compass soils have good natural drainage most of the year, but they tend to dry out slowly after rains. Small areas of wetter soils along drainageways and in swales are commonly included in areas of the moderately well drained soils, especially those that have slopes of 2 to 5 percent. Artificial drainage is needed in some of these wetter areas.

The design of surface drainage systems varies with the kind of soil. Drains have to be more closely spaced in slowly permeable soils than in more permeable soils.

Soil fertility is naturally low in most soils of the uplands in the survey area. All but Oktibbeha soils are naturally acid. The soils on flood plains, such as Yonges soils, range from slightly acid to mildly alkaline and are naturally higher in plant nutrients than most upland soils. Grady and Plummer soils, in low swales and drainageways, are acid.

Many upland soils are naturally very strongly acid. If they have never been limed, they require application of ground limestone to raise the pH level sufficiently for good growth of crops. Available phosphorus and potash levels are naturally low in most of these soils. On all soils additions of lime and fertilizer should be based on the results of soil tests, on the need of the crop, and on the expected level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of fertilizer and lime to be applied.

Soil tilth is an important factor in the germination of seeds and in the infiltration of water into the soil. Soils with good tilth are granular and porous.

Most of the soils used for crops in the survey area have a sandy or sandy loam surface layer that is light in

color and low in content of organic matter. Generally the structure of such soils is weak, and intense rainfall causes the formation of a slight crust on the surface. The crust is slightly hard when dry and is nearly impervious to water. Once the crust forms, it reduces infiltration and increases runoff. Regular additions of crop residue, manure, and other organic material improve soil structure and reduce the risk of crust formation.

Fall plowing is generally not a good practice in the county because about two-thirds of the cropland is sloping soils that are subject to damaging erosion if they are plowed in fall.

Field crops suited to the soils and climate of the survey area include many that are not now commonly grown. Corn, peanuts (fig. 3), and soybeans are the row crops. Grain sorghum, vegetables, sunflowers, potatoes, and similar crops can be grown if economic conditions are favorable.

Wheat, rye, and oats are the common close growing crops. Barley can be grown, and grass seed can be produced from bahiagrass and bermudagrass.

Special crops grown commercially in the survey area are field peas, gladioli (fig. 4), nursery plants, vegetables, pecans, and watermelons. A small acreage throughout the county is used for melons, tomatoes, peppers, and other vegetables and small fruits. In addition, large areas can be adapted to other special crops such as blueberries, peaches, grapes, and many vegetables.

Deep soils that have good natural drainage are especially well suited to many vegetables and small fruits. In the survey area these are the Dothan, Esto, Faceville, Fuquay, Chipola, Orangeburg, Red Bay, and Tifton soils that have slopes of less than 8 percent, a total of about 260,000 acres. If irrigated, about 11,000 acres of Blanton, Bonifay, and Troup soils that have slopes of less than 8 percent are also very well suited to vegetables and small fruits.

Most of the well drained soils in the survey area are suitable for orchards and nursery plants. Soils in low positions where frost is frequent and air drainage is poor generally are poorly suited to early vegetables, small fruits, and orchards.

Latest information and suggestions on growing special crops can be obtained from local offices of the Cooperative Extension Service and the Soil Conservation Service.

Pastures in the survey area produce forage for beef and dairy cattle. Beef cattle cow-calf operations are the most common. Bahiagrass (fig. 5) and improved bermudagrass are the main pasture plants grown in the county. Many farmers seed small grain in the fall for winter and spring forage. Excess grass in summer is harvested as hay (fig. 6) for the winter. The well drained soils that have a loamy surface layer, such as the Dothan, Orangeburg, Red Bay, and Tifton soils, are well suited to legumes with bahiagrass and improved bermudagrass. If adequately limed and fertilized, legumes, such as white, crimson, and arrowleaf clovers, are well suited to these soils.

The well drained and excessively drained Bonifay, Fuquay, and Lakeland soils are well suited to bahiagrass and improved bermudagrass pasture if adequately limed and fertilized.

Pasture in many parts of the county is greatly depleted by continuous excessive grazing. Yields of pasture can be increased under management that includes liming, fertilizing, and planting legumes.

Differences in the amount and kind of pasture yields are related closely to the kind of soil. Management of pasture is based on the relationship of soils, pasture plants, lime, fertilizer, and moisture.

Latest information and suggestions for pasture management can be obtained from local offices of the Cooperative Extension Service and the Soil Conservation Service.

Yields per acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. Absence of an estimated yield indicates that the crop is not suited to or not commonly grown on the soil.

The estimated yields were based mainly on the experience and records of farmers, conservationists, and extension agents. Results of field trials and demonstrations and available yield data from nearby counties were also considered.

The yields were estimated assuming that the latest soil and crop management practices were used. Hay and pasture yields were estimated for the most productive varieties of grasses and legumes suited to the climate and the soil. A few farmers may be obtaining average yields higher than those shown in table 5.

The management needed to achieve the indicated yields of the various crops depends on the kind of soil and the crop. Such management provides drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate tillage practices, including time of tillage and seedbed preparation and tilling when soil moisture is favorable; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residues, barnyard manure, and green-manure crops; harvesting crops with the smallest possible loss; and timeliness of all fieldwork.

The estimated yields reflect the productive capacity of the soils for each of the principal crops. Yields are likely to increase as new production technology is developed.

The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not included because the acreage of these crops is small. The local offices of the Soil Conservation Service and the Cooperative Extension Service can provide information about the management concerns and productivity of the soils for these crops.

Capability classes and subclasses

Capability classes and subclasses show, in a general way, the suitability of soils for most kinds of field crops. The soils are classed according to their limitations when they are used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops that require special management. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forest trees, or for engineering purposes.

In the capability system, all kinds of soil are grouped at two levels: capability class and subclass. These levels are defined in the following paragraphs. A survey area may not have soils of all classes.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants, or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants, or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and landforms have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class; they are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

The acreage of soils in each capability class and subclass is indicated in table 6. All soils in the survey area except those in a miscellaneous map unit or urban land complex are included. Some of the soils that are well suited to crops and pasture may be in low-intensity use, for example, soils in capability classes I and II. Data in this table can be used to determine the farming potential of such soils.

Woodland management and productivity

Carl D. DeFazio, woodland conservationist, Soil Conservation Service, helped prepare this section.

Approximately 320,000 acres, or 55 percent of the survey area, is woodland. The soils and the climate of Jackson County are good for growing timber. The major part of the forested land is Orangeburg and Dothan soils. Commercial forest resources are in scattered areas throughout the county. General farming is prevalent in the north-central and northwestern parts. The major part of the woodland is privately owned small tracts. Approximately 25 percent of the commercial forest is owned by large wood-using industries, mainly pulp and paper corporations.

Slash pine, the predominant species in Jackson County, makes up about 70 percent of the forests. Other major pine species throughout the county are loblolly, sand, shortleaf, and longleaf pine. Longleaf pine once occurred extensively throughout the county particularly in the sandhills of the southwest, but after the old growth stands were cut, this species was replaced by more aggressive species, such as slash and loblolly pine. The most common hardwood species are sweetgum, black gum, water oak, laurel oak, live oak, white oak, yellow-poplar, and hickory. These hardwood species occur most extensively in the eastern part of the county along the Chattahoochee and Apalachicola Rivers and their tributaries and also along the Chipola River in the central part of the county. The Appalachee Wildlife Management Area and Florida Caverns State Park have many hardwood species. A large percentage of the sandhill area

supports turkey oak, southern red oak, post oak, and bluejack oak. These oaks have little economic value.

Timber management varies from intensive thinning, clearcutting, and planting on corporate land to less intensive selective cutting and harvest on private land. Fire is important in reducing "rough" and in exposing mineral soil as a seedbed for natural reproduction. It also encourages grasses and forbs, which help support various wildlife species, such as deer, turkey, and quail.

Markets for wood crops are plentiful in Jackson County. Pulp and paper mills are the major outlets. Also in the county is one sawmill, one veneer mill, and one post-treating plant. Six pulpmills, five sawmills, three veneer mills, and two pole companies buy wood in Jackson County.

More detailed information on woodland and woodland management can be obtained from the local offices of the Soil Conservation Service, the Florida Division of Forestry, and the Florida Cooperative Extension Service.

Table 7 contains information useful to woodland owners or forest managers planning use of soils for wood crops. Map unit symbols for soils suitable for wood crops are listed, and the ordination (woodland suitability) symbol for each soil is given. All soils bearing the same ordination symbol require the same general kinds of woodland management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *x* indicates stoniness or rockiness; *w*, excessive water in or on the soil; *t*, toxic substances in the soil; *d*, restricted root depth; *c*, clay in the upper part of the soil; *s*, sandy texture; *f*, high content of coarse fragments in the soil profile; and *r*, steep slopes. The letter *o* indicates insignificant limitations or restrictions. If a soil has more than one limitation, priority in placing the soil into a limitation class is in the following order: x, w, t, d, c, s, f, and r.

In table 7 the soils are also rated for a number of factors to be considered in management. *Slight, moderate,* and *severe* are used to indicate the degree of major soil limitations.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if some measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or equipment; *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree that the soil affects expected mortality of planted tree seedlings. Plant competition is not considered in the ratings. Seedlings from good planting stock that are properly planted during a period of sufficient rainfall are rated. A rating of *slight* indicates that the expected mortality of the planted seedlings is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

Considered in the ratings of *windthrow hazard* are characteristics of the soil that affect the development of tree roots and the ability of the soil to hold trees firmly. A rating of *slight* indicates that trees in wooded areas are not expected to be blown down by commonly occurring winds; *moderate*, that some trees are blown down during periods of excessive soil wetness and strong winds; and *severe*, that many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

The *potential productivity* of merchantable or *important trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Important trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suitable for commercial wood production and that are suited to the soils.

Windbreaks and environmental plantings

Windbreaks are established to protect livestock, buildings, and yards from wind. Windbreaks also help protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broad-leaved and coniferous species provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field, the interval depending on erodibility of the soil. They protect cropland and crops from wind, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. A healthy planting stock of suitable species planted properly on a well prepared site and maintained in good condition can insure a high degree of plant survival.

Additional information about planning windbreaks and screens and the planting and care of trees can be obtained from local offices of the Soil Conservation Service or the Cooperative Extension Service or from a nursery.

Engineering

Ernest A. Croxton, area engineer, Soil Conservation Service, helped prepare this section.

This section provides information about the use of soils for building sites, sanitary facilities, construction material, and water management. Among those who can benefit from this information are engineers, landowners, community planners, town and city managers, land developers, builders, contractors, and farmers and ranchers.

The ratings in the engineering tables are based on test data and estimated data in the "Soil properties" section. The ratings were determined jointly by soil scientists and engineers of the Soil Conservation Service using known relationships between the soil properties and the behavior of soils in various engineering uses.

Among the soil properties and site conditions identified by a soil survey and used in determining the ratings in this section were grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock that is within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure or aggregation, in-place soil density, and geologic origin of the soil material. Where pertinent, data about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of absorbed cations were also considered.

On the basis of information assembled about soil properties, ranges of values can be estimated for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, shear strength, compressibility, slope stability, and other factors of expected soil behavior in engineering uses. As appropriate, these values can be applied to each major horizon of each soil or to the entire profile.

These factors of soil behavior affect construction and maintenance of roads, airport runways, pipelines, foundations for small buildings, ponds and small dams, irrigation projects, drainage systems, sewage and refuse disposal systems, and other engineering works. The ranges of values can be used to (1) select potential residential, commercial, industrial, and recreational uses; (2) make preliminary estimates pertinent to construction in a particular area; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for location of sanitary landfills, onsite sewage disposal systems, and other waste disposal facilities; (5) plan detailed onsite investigations of soils and geology; (6) find sources of gravel, sand, clay, and topsoil; (7) plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; (8) relate performance of structures already built to the properties of the kinds of soil on which they are built so that performance of similar structures on the same or a similar soil in other locations can be predicted; and (9) predict the trafficability of soils for cross-country movement of vehicles and construction equipment.

Data presented in this section are useful for land-use planning and for choosing alternative practices or general designs that will overcome unfavorable soil properties and minimize soil-related failures. Limitations to the use of these data, however, should be well understood. First, the data are generally not presented for soil material below a depth of 5 or 6 feet. Also, because of the scale of the detailed map in this soil survey, small areas of soils that differ from the dominant soil may be included in mapping. Thus, these data do not eliminate the need for onsite investigations, testing, and analysis by personnel having expertise in the specific use contemplated.

The information is presented mainly in tables. Table 8 shows, for each kind of soil, the degree and kind of limitations for building site development; table 9, for sanitary facilities; and table 10, for water management. Table 11 shows the suitability of each kind of soil as a source of construction materials.

The information in the tables, along with the soil map, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations and to construct interpretive maps for specific uses of land.

Some of the terms used in this soil survey have a special meaning in soil science. Many of these terms are defined in the Glossary.

Building site development

The degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, and local roads and streets are indicated in table 8. A *slight* limitation indicates that soil properties generally are favorable for the specified use; any limitation is minor and easily overcome. A *moderate* limitation indicates that soil properties and site features are unfavorable for the specified use, but the limitations can be overcome or minimized by special planning and design. A *severe* limitation indicates that one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. For some soils rated severe, such costly measures may not be feasible.

Shallow excavations are made for pipelines, sewerlines, communications and power transmission lines, basements, and open ditches. Such digging or trenching is influenced by soil wetness caused by a seasonal high water table; the texture and consistence of soils; the tendency of soils to cave in or slough; and the presence of very firm, dense soil layers, bedrock, or large stones. In addition, excavations are affected by slope of the soil and the probability of flooding. Ratings do not apply to

soil horizons below a depth of 6 feet unless otherwise noted.

In the soil series descriptions, the consistence of each soil horizon is given, and the presence of very firm or extremely firm horizons, usually difficult to excavate, is indicated.

Dwellings and *small commercial buildings* referred to in table 8 are built on undisturbed soil and have foundation loads of a dwelling no more than three stories high. Separate ratings are made for small commercial buildings without basements and for dwellings with and without basements. For such structures, soils should be sufficiently stable that cracking or subsidence of the structure from settling or shear failure of the foundation does not occur. These ratings were determined from estimates of the shear strength, compressibility, and shrink-swell potential of the soil. Soil texture, plasticity and in-place density, soil wetness, and depth to a seasonal high water table were also considered. Soil wetness and depth to a seasonal high water table indicate potential difficulty in providing adequate drainage for basements, lawns, and gardens. Depth to bedrock, slope, and large stones in or on the soil are also important considerations in the choice of sites for these structures and were considered in determining the ratings. Susceptibility to flooding is a serious hazard.

Local roads and streets referred to in table 8 have an all-weather surface that can carry light to medium traffic all year. They consist of a subgrade of the underlying soil material; a base of gravel, crushed rock fragments, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. The roads are graded with soil material at hand, and most cuts and fills are less than 6 feet deep.

The load supporting capacity and the stability of the soil as well as the quantity and workability of fill material available are important in design and construction of roads and streets. The classifications of the soil and the soil texture, density, and shrink-swell potential, are indicators of the traffic supporting capacity used in making the ratings. Soil wetness, flooding, slope, depth to hard rock or very compact layers, and content of large stones affect stability and ease of excavation.

Sanitary facilities

Favorable soil properties and site features are needed for proper functioning of septic tank absorption fields, sewage lagoons, and sanitary landfills. The nature of the soil is important in selecting sites for these facilities and in identifying limiting soil properties and site features to be considered in design and installation. Also, those soil properties that affect ease of excavation or installation of these facilities will be of interest to contractors and local officials. Table 9 shows the degree and kind of limitations of each soil for such uses and for use of the soil as daily cover for landfills. It is important to observe local ordinances and regulations.

If the degree of soil limitation is expressed as *slight*, soils are generally favorable for the specified use and limitations are minor and easily overcome; if *moderate*, soil properties or site features are unfavorable for the specified use, but limitations can be overcome by special planning and design; and if *severe*, soil properties or site features are so unfavorable or difficult to overcome that major soil reclamation, special designs, or intensive maintenance is required. Soil suitability is rated by the terms *good*, *fair*, or *poor*, which, respectively, mean about the same as the terms *slight*, *moderate*, and *severe*.

Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into the natural soil. Only the soil horizons between depths of 18 and 72 inches are evaluated for this use. The soil properties and site features considered are those that affect the absorption of the effluent and those that affect the construction of the system.

Properties and features that affect absorption of the effluent are permeability, depth to seasonal high water table, depth to bedrock, and susceptibility to flooding. Stones, boulders, and shallowness to bedrock interfere with installation. Excessive slope can cause lateral seepage and surfacing of the effluent. Also, soil erosion and soil slippage are hazards if absorption fields are installed on sloping soils.

In some soils, loose sand and gravel or fractured bedrock is less than 4 feet below the tile lines. In these soils the absorption field does not adequately filter the effluent, and ground water in the area may be contaminated.

On many of the soils that have moderate or severe limitations for use as septic tank absorption fields, a system to lower the seasonal water table can be installed or the size of the absorption field can be increased so that performance is satisfactory.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons have a nearly level floor and cut slopes or embankments of compacted soil material. Aerobic lagoons generally are designed to hold sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Soils that are very high in content of organic matter and those that have cobbles, stones, or boulders are not suitable. Unless the soil has very slow permeability, contamination of ground water is a hazard. In soils where the water table is seasonally high, seepage of ground water into the lagoon can seriously reduce the lagoon's capacity for liquid waste. Slope, depth to bedrock, and susceptibility to flooding also affect the suitability of sites for sewage lagoons or the cost of construction. Shear strength and permeability of compacted soil material affect the performance of embankments.

Sanitary landfill is a method of disposing of solid waste by placing refuse in successive layers either in excavated trenches or on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil material. Landfill areas are subject to heavy vehicular traffic. Risk of polluting ground water and trafficability affect the suitability of a soil for this use. The best soils have a loamy or silty texture, have moderate to slow permeability, are deep to a seasonal water table, and are not subject to flooding. Clayey soils are likely to be sticky and difficult to spread. Sandy or gravelly soils generally have rapid permeability, which might allow noxious liquids to contaminate ground water. Soil wetness can be a limitation, because operating heavy equipment on a wet soil is difficult. Seepage into the refuse increases the risk of pollution of ground water.

Ease of excavation affects the suitability of a soil for the trench type of landfill. A suitable soil is deep to bedrock and free of large stones and boulders. If the seasonal water table is high, water will seep into trenches.

Unless otherwise stated, the limitations in table 9 apply only to the soil material within a depth of about 6 feet. If the trench is deeper, a limitation of slight or moderate may not be valid. Site investigation is needed before a site is selected.

Daily cover for landfill should be soil that is easy to excavate and spread over the compacted fill in wet and dry periods. Soils that are loamy or silty and free of stones or boulders and have low permeability are better than other soils. Clayey soils may be sticky and difficult to spread; sandy soils may be subject to soil blowing.

The soils selected for final cover of landfills should be suitable for growing plants. Of all the horizons, the A horizon in most soils has the best workability, more organic matter, and the best potential for growing plants. Thus, for either the area- or trench-type landfill, stockpiling material from the A horizon for use as the surface layer of the final cover is desirable.

Where it is necessary to bring in soil material for daily or final cover, thickness of suitable soil material available and depth to a seasonal high water table in soils surrounding the sites should be evaluated. Other factors to be evaluated are those that affect reclamation of the borrow areas. These factors include slope, erodibility, and potential for plant growth.

Water management

Many soil properties and site features that affect water management practices have been identified in this soil survey. In table 10 the degree of soil limitation and soil and site features that affect use are indicated for each kind of soil. This information is significant in planning, installing, and maintaining water management systems.

Soil and site limitations are expressed as slight, moderate, and severe. *Slight* means that the soil properties and site features are generally favorable for the specified use and that any limitation is minor and easily overcome. *Moderate* means that some soil properties or site features are unfavorable for the specified use but can be overcome or modified by special planning and design. *Severe* means that the soil properties and site features are so unfavorable and so difficult to correct or overcome that major soil reclamation, special design, or intensive maintenance is required.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have a low seepage potential, which is determined by permeability and the depth to fractured or permeable bedrock or other permeable material.

Embankments, dikes, and levees require soil material that is resistant to seepage, erosion, and piping and has favorable stability, shrink-swell potential, shear strength, and compaction characteristics. Large stones and organic matter in a soil downgrade the suitability of a soil for use in embankments, dikes, and levees.

Drainage of soil is affected by such soil properties as permeability; texture; depth to bedrock, or other layers that affect the rate of water movement; depth to the water table; slope; stability of ditchbanks; susceptibility to flooding; salinity and alkalinity; and availability of outlets for drainage.

Irrigation is affected by such features as slope, susceptibility to flooding, hazards of water erosion and soil blowing, texture, depth of root zone, rate of water intake at the surface, permeability of the soil below the surface layer, available water capacity, need for drainage, and depth to the water table.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to intercept runoff. They allow water to soak into the soil or flow slowly to an outlet. Features that affect suitability of a soil for terraces are uniformity and steepness of slope; depth to bedrock, or other unfavorable material; large stones; permeability; ease of establishing vegetation; and resistance to water erosion, soil blowing, soil slipping, and piping.

Grassed waterways are constructed to channel runoff to outlets at a nonerosive velocity. Features that affect the use of soils for waterways are slope, permeability, erodibility, wetness, and suitability for permanent vegetation.

Construction materials

The suitability of each soil as a source of roadfill, sand, gravel, and topsoil is indicated in table 11 by ratings of good, fair, or poor. The texture, thickness, and organic-matter content of each soil horizon are important factors in rating soils for use as construction materials. Each soil is evaluated to the depth observed, generally about 6 feet.

Roadfill is soil material used in embankments for roads. Soils are evaluated as a source of roadfill for low embankments, which generally are less than 6 feet high and less exacting in design than high embankments. The ratings reflect the ease of excavating and working the material and the expected performance of the material where it has been compacted and adequately drained. The performance of soil after it is stabilized with lime or cement is not considered in the ratings, but information about some of the soil properties that influence such performance is given in the descriptions of the soil series.

The ratings apply to the soil material between the A horizon and a depth of 5 to 6 feet. It is assumed that soil horizons will be mixed during excavation and spreading. Many soils have horizons of contrasting suitability within their profile. The estimated engineering properties in table 14 provide specific information about the nature of each horizon. This information can help determine the suitability of each horizon for roadfill.

Soils rated *good* are coarse grained. They have low shrink-swell potential, and few cobbles and stones. They are at least moderately well drained and have slopes of 15 percent or less. Soils rated *fair* have a plasticity index of less than 15 and have other limiting features, such as moderate shrink-swell potential, moderately steep slopes, wetness, or many stones. If the thickness of suitable material is less than 3 feet, the entire soil is rated *poor*.

Sand and *gravel* are used in great quantities in many kinds of construction. The ratings in table 11 provide guidance as to where to look for probable sources and are based on the probability that soils in a given area contain sizable quantities of sand or gravel. A soil rated *good* or *fair* has a layer of suitable material at least 3 feet thick, the top of which is within a depth of 6 feet. Coarse fragments of soft bedrock material, such as shale and siltstone, are not considered to be sand and gravel. Fine-grained soils are not suitable sources of sand and gravel.

The ratings do not take into account depth to the water table or other factors that affect excavation of the material. Descriptions of grain size, kinds of minerals, reaction, and stratification are given in the soil series descriptions and in table 14.

Topsoil is used in areas where vegetation is to be established and maintained. Suitability is affected mainly by the ease of working and spreading the soil material in preparing a seedbed and by the ability of the soil material to support plantlife. Also considered is the damage that can result at the area from which the topsoil is taken.

The ease of excavation is influenced by the thickness of suitable material, wetness, slope, and amount of stones. The ability of the soil to support plantlife is determined by texture, structure, and the amount of soluble salts or toxic substances. Organic matter in the A1 or Ap horizon greatly increases the absorption and retention of moisture and nutrients. Therefore, the soil material from these horizons should be carefully preserved for later use.

Soils rated *good* have at least 16 inches of friable loamy material at their surface. They are free of stones and cobbles, are low in content of gravel, and have gentle slopes. They are low in soluble salts that can limit or prevent plant growth. They are naturally fertile or respond well to fertilizer. They are not so wet that excavation is difficult during most of the year.

Soils rated *fair* are loose sandy soils or firm loamy or clayey soils in which the suitable material is only 8 to 16 inches thick.

Soils rated *poor* are very sandy soils and very firm clayey soils; soils with suitable layers less than 8 inches thick; steep soils; and poorly drained soils.

Although a rating of *good* is not based entirely on high content of organic matter, a surface horizon is generally preferred for topsoil because of its organic-matter content. This horizon is designated as A1 or Ap in the soil series descriptions. The absorption and retention of moisture and nutrients for plant growth are greatly increased by organic matter.

Recreation

Recreation is important in Jackson County. The Chipola River provides canoeing, boating, fishing, and scuba diving for fossils and Indian artifacts. Fishing, boating, and skiing are popular on Lake Seminole and Ocheesee Pond. Florida Caverns State Park and Three Rivers State Park have facilities for picnicking, hiking, golf (fig. 7), swimming (fig. 8), and other recreational activities. Hunting is also popular. Many areas in the county have high potential for recreational development.

The soils of the survey area are rated in table 12 according to limitations that affect their suitability for recreation uses. The ratings are based on such restrictive soil features as flooding, wetness, slope, and texture of the surface layer. Not considered in these ratings, but important in evaluating a site, are location and accessibility of the area, size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, potential water impoundment sites available, and either access to public sewerlines or capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degree, for recreation use by the duration and intensity of flooding and the season when flooding occurs. Onsite assessment of height, duration, intensity, and frequency of flooding is essential in planning recreation facilities.

The degree of the limitation of the soils is expressed as slight, moderate, or severe. *Slight* means that the soil properties are generally favorable and that the limitations are minor and easily overcome. *Moderate* means that the limitations can be overcome or alleviated by plan-

ning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 12 can be supplemented by information in other parts of this survey. Especially helpful are interpretations for septic tank absorption fields, given in table 9, and interpretations for dwellings without basements and for local roads and streets, given in table 8.

Camp areas require such site preparation as shaping and leveling for tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils for this use have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing camping sites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for use as picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that will increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones or boulders, is firm after rains, and is not dusty when dry. If shaping is required to obtain a uniform grade, the depth of the soil over bedrock or hardpan should be enough to allow necessary grading.

Paths and trails for walking, horseback riding, bicycling, and other uses should require little or no cutting and filling. The best soils for this use are those that are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once during the annual period of use. They should have moderate slopes and have few or no stones or boulders on the surface.

Wildlife habitat

John F. Vance, Jr., biologist, Soil Conservation Service, helped prepare this section.

Wildlife is a valuable resource of Jackson County. Although intensive farming operations, conversion to pine plantations, and increasing urbanization have reduced the acreage of suitable habitat, large areas are still undeveloped and support a large variety and number of wildlife species. Most of the county provides good habitat for wildlife, especially the bottom land along Holmes Creek and the Apalachicola and Chipola Rivers. The Apalachee Wildlife Management Area is near Lake Seminole.

Game animals prominent in the county include bobwhite quail, mourning dove, rabbit, gray squirrel, fox squirrel, white-tailed deer, turkey, waterfowl, red fox, gray fox, and raccoon. In addition, a variety of songbirds, woodpeckers, predatory birds, wading birds, reptiles, and small mammals are common; occasionally armadillo and wild hog are seen. Small game is found all over the county, but deer, turkey and waterfowl are less common. Deer populations are greatest in the large wooded tracts of the sandhills and the swamps. Turkey populations, which have declined during the past few years, are fairly low. Most turkey are along the river bottoms. Waterfowl are sparse. Most of those in the county are in the swamps and on Lake Seminole.

A wide variety of fish species occur in the streams, lakes, and reservoirs of the county. The most commonly sought game fish include largemouth bass, bluegill, redear, spotted sunfish, redbreast sunfish, black crappie, pickerel, and warmouth. In addition, the rare Chipola bass is caught in the Chipola River. Nongame fish commonly found in the county include eels, shad, bowfin, catfish, gar, suckers, and shiners.

Soils directly affect the kind and amount of vegetation that is available to wildlife as food and cover, and they affect the construction of water impoundments. The kind and abundance of wildlife that populate an area depend largely on the amount and distribution of food, cover, and water. If any one of these elements is missing, is inadequate, or is inaccessible, wildlife either are scarce or do not inhabit the area.

If the soils have the potential, wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by helping the natural establishment of desirable plants.

In table 13, the soils in the survey area are rated according to their potential to support the main kinds of wildlife habitat in the area. This information can be used in planning for parks, wildlife refuges, nature study areas, and other developments for wildlife; selecting areas that are suitable for wildlife; selecting soils that are suitable for creating, improving, or maintaining specific elements of wildlife habitat; and determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* means that the element of wildlife habitat or the kind of habitat is easily created, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected if the soil is used for the designated purpose. A rating of *fair* means that the element of wildlife habitat or kind of habitat can be created, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* means that limitations are severe for the designated element or kind of

wildlife habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* means that restrictions for the element of wildlife habitat or kind of wildlife are very severe, and that unsatisfactory results can be expected. Wildlife habitat is impractical or even impossible to create, improve, or maintain on soils having such a rating.

The elements of wildlife habitat are briefly described in the following paragraphs.

Grain and seed crops are seed-producing annuals used by wildlife. The major soil properties that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations.

Grasses and legumes are domestic perennial grasses and herbaceous legumes that are planted for wildlife food and cover. Major soil properties that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope. Soil temperature and soil moisture are also considerations.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Major soil properties that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flood hazard. Soil temperature and soil moisture are also considerations.

Hardwood trees and the associated woody understory provide cover for wildlife and produce nuts or other fruit, buds, catkins, twigs, bark, or foliage that wildlife eat. Major soil properties that affect growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness.

Coniferous plants are cone-bearing trees, shrubs, or ground cover plants that furnish habitat or supply food in the form of browse, seeds, or fruitlike cones. Soil properties that have a major effect on the growth of coniferous plants are depth of the root zone, available water capacity, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites, exclusive of submerged or floating aquatics. They produce food or cover for wildlife that use wetland as habitat. Major soil properties affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness.

Shallow water areas are bodies of water that have an average depth of less than 5 feet and that are useful to wildlife. They can be naturally wet areas, or they can be created by dams or levees or by water-control structures in marshes or streams. Major soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. The availability of a dependable water supply is important if water areas are to be developed.

The kinds of wildlife habitat are briefly described in the following paragraphs.

Openland habitat consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants.

Woodland habitat consists of areas of hardwoods or conifers, or a mixture of both, and associated grasses, legumes, and wild herbaceous plants.

Wetland habitat consists of open, marshy or swampy, shallow water areas where water-tolerant plants grow.

Soil properties

Extensive data about soil properties are summarized on the following pages. The two main sources of these data are the many thousands of soil borings made during the course of the survey and the laboratory analyses of selected soil samples from typical profiles.

In making soil borings during field mapping, soil scientists can identify several important soil properties. They note the seasonal soil moisture condition or the presence of free water and its depth. For each horizon in the profile, they note the thickness and color of the soil material; the texture, or amount of clay, silt, sand, and gravel or other coarse fragments; the structure, or the natural pattern of cracks and pores in the undisturbed soil; and the consistence of the soil material in place under the existing soil moisture conditions. They record the depth of plant roots, determine the pH or reaction of the soil, and identify any free carbonates.

Samples of soil material are analyzed in the laboratory to verify the field estimates of soil properties and to determine all major properties of key soils, especially properties that cannot be estimated accurately by field observation. Laboratory analyses are not conducted for all soil series in the survey area, but laboratory data for many soil series not tested are available from nearby survey areas.

The available field and laboratory data are summarized in tables. The tables give the estimated range of engineering properties, the engineering classifications, and the physical and chemical properties of each major horizon of each soil in the survey area. They also present data about pertinent soil and water features, engineering test data, and data obtained from physical and chemical laboratory analyses of soils.

Engineering properties

Table 14 gives estimates of engineering properties and classifications for the major horizons of each soil in the survey area.

Most soils have, within the upper 5 or 6 feet, horizons of contrasting properties. Table 14 gives information for each of these contrasting horizons in a typical profile. *Depth* to the upper and lower boundaries of each horizon is indicated. More information about the range in depth and about other properties in each horizon is given for each soil series in the section "Soil series and morphology."

Texture is described in table 14 in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If a soil contains gravel or other particles coarser than sand, an appropriate modifier is added, for example, "gravelly loam." Other texture terms are defined in the Glossary.

The two systems commonly used in classifying soils for engineering use are the Unified Soil Classification System (Unified) (*2*) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO) (*1*).

The *Unified* system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter, plasticity index, liquid limit, and organic-matter content. Soils are grouped into 15 classes—eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as Pt. Soils on the borderline between two classes have a dual classification symbol, for example, CL-ML.

The *AASHTO* system classifies soils according to those properties that affect their use in highway construction and maintenance. In this system a mineral soil is classified in one of seven basic groups ranging from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines. At the other extreme, in group A-7, are fine-grained soils. Highly organic soils are classified in group A-8 on the basis of visual inspection.

When laboratory data are available, the A-1, A-2, and A-7 groups are further classified as follows: A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, and A-7-6. As an additional refinement, the desirability of soils as subgrade material can be indicated by a group index number. These numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested in the survey area, with group index numbers in parentheses, is given in table 20. The estimated classification, without group index numbers, is given in table 14. Also in table 14 the percentage, by weight, of rock fragments more than 3 inches in diameter is estimated for each major horizon. These estimates are determined mainly by observing volume percentage in the field and then converting that, by formula, to weight percentage.

Percentage of the soil material less than 3 inches in diameter that passes each of four sieves (U.S. standard) is estimated for each major horizon. The estimates are based on tests of soils that were sampled in the survey area and in nearby areas and on field estimates from many borings made during the survey.

Liquid limit and *plasticity index* indicate the effect of water on the strength and consistence of soil. These indexes are used in both the Unified and AASHTO soil classification systems. They are also used as indicators in making general predictions of soil behavior. Range in liquid limit and plasticity index is estimated on the basis of test data from the survey area or from nearby areas and on observations of the many soil borings made during the survey.

In some surveys, the estimates are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterburg limits extend a marginal amount across classification boundaries (1 or 2 percent), the classification in the marginal zone is omitted.

Physical and chemical properties

Table 15 shows estimated values for several soil characteristics and features that affect behavior of soils in engineering uses. These estimates are given for each major horizon, at the depths indicated, in the typical pedon of each soil. The estimates are based on field observations and on test data for these and similar soils.

Permeability is estimated on the basis of known relationships among the soil characteristics observed in the field—particularly soil structure, porosity, and gradation or texture—that influence the downward movement of water in the soil. The estimates are for vertical water movement when the soil is saturated. Not considered in the estimates is lateral seepage or such transient soil features as plowpans and surface crusts. Permeability of the soil is an important factor to be considered in planning and designing drainage systems, in evaluating the potential of soils for septic tank systems and other waste disposal systems, and in many other aspects of land use and management.

Available water capacity is rated on the basis of soil characteristics that influence the ability of the soil to hold water and make it available to plants. Important characteristics are content of organic matter, soil texture, and soil structure. Shallow-rooted plants are not likely to use the available water from the deeper soil horizons. Availa-

ble water capacity is an important factor in the choice of plants or crops to be grown and in the design of irrigation systems.

Soil reaction is expressed as a range in pH values. The range in pH of each major horizon is based on many field checks. For many soils, the values have been verified by laboratory analyses. Soil reaction is important in selecting the crops, ornamental plants, or other plants to be grown; in evaluating soil amendments for fertility and stabilization; and in evaluating the corrosivity of soils.

Shrink-swell potential depends mainly on the amount and kind of clay in the soil. Laboratory measurements of the swelling of undisturbed clods were made for many soils. For others the swelling was estimated on the basis of the kind and amount of clay in the soil and on measurements of similar soils. The size of the load and the magnitude of the change in soil moisture content also influence the swelling of soils. Shrinking and swelling of some soils can cause damage to building foundations, basement walls, roads, and other structures unless special designs are used. A high shrink-swell potential indicates that special design and added expense may be required if the planned use of the soil will not tolerate large volume changes.

Erosion factors are used to predict the erodibility of a soil and its tolerance to erosion in relation to specific kinds of land use and treatment. The soil erodibility factor (K) is a measure of the susceptibility of the soil to erosion by water. Soils having the highest K values are the most erodible. K values range from 0.10 to 0.64. To estimate annual soil loss per acre, the K value of a soil is modified by factors representing plant cover, grade and length of slope, management practices, and climate. The soil-loss tolerance factor (T) is the maximum rate of soil erosion, whether from rainfall or soil blowing, that can occur without reducing crop production or environmental quality. The rate is expressed in tons of soil loss per acre per year.

Wind erodibility groups are made up of soils that have similar properties that affect their resistance to soil blowing if cultivated. The groups are used to predict the susceptibility of soil to blowing and the amount of soil lost as a result of blowing. Soils are grouped according to the following distinctions:

1. Sands, coarse sands, fine sands, and very fine sands. These soils are extremely erodible, so vegetation is difficult to establish. They are generally less suitable for crops.

2. Loamy sands, loamy fine sands, and loamy very fine sands. These soils are very highly erodible, but crops can be grown if intensive measures to control soil blowing are used.

3. Sandy loams, coarse sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible, but crops can be grown if intensive measures to control soil blowing are used.

4L. Calcareous loamy soils that are less than 35 percent clay and more than 5 percent finely divided calcium carbonate. These soils are erodible, but crops can be grown if intensive measures to control soil blowing are used.

4. Clays, silty clays, clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible, but crops can be grown if measures to control soil blowing are used.

5. Loamy soils that are less than 18 percent clay and less than 5 percent finely divided calcium carbonate and sandy clay loams and sandy clays that are less than 5 percent finely divided calcium carbonate. These soils are slightly erodible, but crops can be grown if measures to control soil blowing are used.

6. Loamy soils that are 18 to 35 percent clay and less than 5 percent finely divided calcium carbonate, except silty clay loams. These soils are very slightly erodible, and crops can easily be grown.

7. Silty clay loams that are less than 35 percent clay and less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible, and crops can easily be grown.

8. Stony or gravelly soils and other soils not subject to soil blowing.

Soil and water features

Table 16 contains information helpful in planning land uses and engineering projects that are likely to be affected by soil and water features.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are placed in one of four groups on the basis of the intake of water after the soils have been wetted and have received precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of deep, well drained to excessively drained sands or gravels. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils that have a layer that impedes the downward movement of water or soils that have moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clay soils that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface,

and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding is the temporary covering of soil with water from overflowing streams, and runoff from adjacent slopes. Water standing for short periods after rains is not considered flooding, nor is water in swamps and marshes. Flooding is rated in general terms that describe the frequency and duration of flooding and the time of year when flooding is most likely. The ratings are based on evidence in the soil profile of the effects of flooding, namely thin strata of gravel, sand, silt, or, in places, clay deposited by floodwater; irregular decrease in organic-matter content with increasing depth; and absence of distinctive soil horizons that form in soils of the area that are not subject to flooding. The ratings are also based on local information about floodwater levels in the area and the extent of flooding; and on information that relates the position of each soil on the landscape to historic floods.

The generalized description of flood hazards is of value in land-use planning and provides a valid basis for land-use restrictions. The soil data are less specific, however, than those provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table is the highest level of a saturated zone more than 6 inches thick for a continuous period of more than 2 weeks during most years. The depth to a seasonal high water table applies to undrained soils. Estimates are based mainly on the relationship between grayish colors or mottles in the soil and the depth to free water observed in many borings made during the course of the soil survey. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table, that is, perched or apparent; and the months of the year that the water table commonly is high. Only saturated zones above a depth of 5 or 6 feet are indicated.

Information about the seasonal high water table helps in assessing the need for specially designed foundations, the need for specific kinds of drainage systems, and the need for footing drains to insure dry basements. Such information is also needed to decide whether or not construction of basements is feasible and to determine how septic tank absorption fields and other underground installations will function. Also, a seasonal high water table affects ease of excavation.

Depth to bedrock is shown for all soils that are underlain by bedrock at a depth of 5 to 6 feet or less. For many soils, the limited depth to bedrock is a part of the definition of the soil series. The depths shown are based on measurements made in many soil borings and on other observations during the mapping of the soils. The kind of bedrock and its hardness as related to ease of excavation is also shown. Rippable bedrock can be excavated with a single-tooth ripping attachment on a 200-horsepower tractor, but hard bedrock generally requires blasting.

Subsidence is the settlement of the soil surface. Subsidence generally results from drainage, imposed loads, and oxidation. Freedraining soils, such as clean sands, subside almost instantly if a load is applied; clays subside over a long period of time because of the slow release of pore pressure. In organic soils, initial subsidence generally results from drainage. Additional subsidence occurs over a period of several years as a result of oxidation or compression of the organic material.

Risk of corrosion pertains to potential soil-induced chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to soil moisture, particle-size distribution, total acidity, and electrical conductivity of the soil material. The rate of corrosion of concrete is based mainly on the sulfate content, texture, and acidity of the soil. Protective measures for steel or more resistant concrete help to avoid or minimize damage resulting from the corrosion. Uncoated steel intersecting soil boundaries or soil horizons is more susceptible to corrosion than an installation that is entirely within one kind of soil or within one soil horizon.

Physical, chemical, and mineralogical analyses of selected soils

By C.T. Hallmark, assistant professor of soil science, and V.W. Carlisle and R.E. Caldwell, professors of soil science, Soil Science Department, University of Florida Agricultural Experiment Station.

Physical, chemical, and mineralogical properties of representative pedon samples in Jackson County are listed in tables 17, 18, and 19. Analyses were conducted and coordinated by the Soil Characterization Laboratory, Soil Science Department, University of Florida. Profiles of the soils analyzed, in alphabetic order, are described under "Soil series and morphology." Laboratory data and profile information for additional soils occurring in Jackson County as well as other counties in Florida are on file at the Soil Science Department, University of Florida.

Soils were sampled by horizon from pits at carefully selected locations that represented the typical pedons. Samples were air-dried, crushed, and sieved through a 2 millimeter screen. Most of the analytical methods used are outlined in Soil Survey Investigations Report No. 1 (*6*).

Particle size distribution was determined by using a modification of the Bouyoucos hydrometer procedure with sodium hexametaphosphate as the dispersant. Hydraulic conductivity, bulk density, and water content data were obtained on undisturbed core samples. Organic carbon was determined by a modification of the Walkley-Black wet combustion method. Extractable bases were obtained by equilibrating and leaching soils with ammonium acetate buffered at pH 7.0. Sodium and potassium in

the extract were determined by flame photometry; calcium and magnesium were determined by atomic absorption spectroscopy. Extractable acidity was determined by the barium chloride-triethanolamine method at pH 8.2. The sum of cations, which may be considered a measure of the cation exchange capacity, was obtained by summation of extractable bases and extractable acidity. Base saturation is the ratio of extractable bases to sum of cations expressed in percent. The pH measurements were made with a glass electrode using water in a 1:1 soil-solution ratio; a 0.01 molar calcium chloride solution in a 1:2 soil-solution ratio; and a normal potassium chloride solution in a 1:1 soil-solution ratio. Electrical conductivity was determined by using a conductivity bridge on a 1:1 soil to water mixture. Iron and aluminum extractable in sodium dithionite-citrate were determined by atomic absorption.

Peak heights at 18-, 14-, 7.2-, 4.83-, and 4.31-angstrom positions representing montmorillonite and/or interstratified expandibles, vermiculate and/or 14-angstrom intergrades, kaolinite, gibbsite, and quartz, respectively, were measured, summed, and normalized to give the percentage of soil minerals identified in the X-ray diffractograms. These values are not an absolute quantity but a relative distribution of minerals in the clay fraction. Finding the absolute percentage would require additional knowledge of particle size, crystallinity, unit structure substitution, and matrix effects.

Generally the soils show an increase of clay in the B horizon relative to that in the overlying A horizon (see table 17), which indicates the presence of an argillic horizon in the subsoil. Exceptions are the Apalachee and Lakeland soils. In soils where clay content increases with increasing depth, the percentages of silt and especially sand show corresponding decreases. The A horizons in all pedons but that of the Apalachee soil are more than 70 percent sand. In Albany, Lakeland, and Troup soils this horizon is more than 90 percent sand. Only five soils—the Blanton, Chipola, Compass, Fuquay, and Orangeburg—are more than 20 percent very coarse and coarse sand. Silt content is generally near 10 percent in all pedons; the most notable exception is the Apalachee soil, which is nearly 30 percent silt. Only the Apalachee pedon is dominated by clay throughout the depth of sampling.

Hydraulic conductivity (table 17) is a measure of the movement of water through the soil when the soil is saturated. Generally, hydraulic conductivity decreases with increasing bulk density and percentages of clay and silt and increases with increasing organic matter and better developed structure. According to the data in table 17, the clay and sandy clay textures show hydraulic conductivities below 2.6 centimeters per hour and in many soils values below 0.1 centimeter per hour. Sands and loamy sands show hydraulic conductivities that range from 3.0 to 66.4 centimeters per hour and average more than 20 centimeters per hour. Intermediate textures show intermediate hydraulic conductivity values. The capacity of soil to hold water available for plants can be estimated from the bulk density and water content data in table 17. Generally, the sand and loamy sand textured horizons retain less available water than do the horizons of sandy loam, sandy clay loam, sandy clay, and clay texture. Calculated to a depth of 1 meter, the total available water capacity ranges from nearly 4 centimeters in the Lakeland and Troup soils, which are sandy throughout, to more than 12 centimeters in the Apalachee, Compass, Duplin, Faceville, Hornsville, and Leefield soils, which contain significant amounts of silt and clay within 1 meter of the surface. Other soils for which data are available are intermediate within this range.

Low values for extractable bases, the sum of cations, and the base saturation, table 18, indicate low inherent soil fertility. Calcium and magnesium are the predominant bases, and the largest amounts occur in the Apalachee soil. Sodium is almost uniformly low in all but the Apalachee soil. Trace amounts of potassium along with low base saturation support the absence of appreciable quantities of weatherable minerals in that soil. The sum of cations reflects the amount of organic matter, the amount of clay, and the type of clay and increases with an increasing content of organic matter and clay. Therefore, the sum of cations generally is high in the surface horizon, decreases with increasing depth, and then increases again in the argillic horizon. The organic carbon content is highest in the upper horizon of all but the Albany soil. It decreases with increasing depth to less than 0.12 percent at a depth of 1 meter in all but the Apalachee soil. Because organic carbon directly influences nutrient and water retention capacities, management that conserves and maintains the level of organic carbon is desirable and is especially important on the soils that are low in organic carbon and clay content, for example, the Albany, Blanton, Lakeland, and Troup soils. Electrical conductivity values reflect the amount of free salts in the soil solution. A high value indicates conditions that may adversely affect plant growth. According to the data in table 18, none of the soils show values high enough to indicate a hazard.

The pH determinations reflect the active acidity of the soils. In general, the availability of nutrient is greatest in soil if the reaction in water is between pH 6 and 7. Addition of lime is a common management practice used to raise the pH of the plow layer. In only one of the soils analyzed, the Orangeburg, was the reaction in water more than pH 6.0. Most likely, this soil had been limed recently, because under native vegetation, Orangeburg soils have pH values near 5. Soil reaction in calcium chloride is generally 0.5 to 1 unit lower than in water.

Citrate-dithionite extractable iron and aluminum are associated with the ability of a soil to absorb and, with time, make phosphorus unavailable to plants. Notably, the Apalachee, Faceville, Greenville, Orangeburg, and

Red Bay soils show high extractable iron and/or aluminum near the surface.

Mineralogy of the sand and silt fractions (not shown) is siliceous. Sand mineralogy was determined by optical microscopy on a total of 20 samples from 9 soils—Clarendon, Bonifay, Dothan, Fuquay, Chipola, Orangeburg, Red Bay, Troup, and Lakeland. Grain counts were made by the National Soil Survey Laboratory, Soil Conservation Service, Lincoln, Nebraska. The sands are from 96 to more than 99 percent quartz and 4 to 1 percent other resistant minerals. No weatherable minerals were observed. Mineralogy of the crystalline components of the clay fraction is reported in table 19 for selected horizons of the pedons. In general the clay mineralogical suite consists of montmorillonite, a 14 angstrom intergrade mineral, kaolinite, gibbsite, and quartz. Vermiculite was noted only in the Apalachee pedon in trace amounts, and mica (illite) was found only in the Apalachee, Duplin, Esto, Faceville, and Hornsville soils. Except in the Apalachee soil, the montmorillonite content ranged from 0 to 8 percent. Because of the shrink-swell characteristics of montmorillonite and the high amount of this mineral in the Apalachee soil, care is needed in utilizing this soil for any engineering purpose. Kaolinite, quartz, and the 14 angstrom intergrade minerals occur in all pedons. Generally the quantity of quartz and the 14 angstrom intergrade mineral decrease with increasing depth whereas the quantity of kaolinite increases. This tendency suggests that the 14 angstrom intergrade mineral is more stable than kaolinite in the acidic weathering environment near the surface and that quartz in the clay fraction is the result of the decrement of silt-sized quartz.

Engineering test data

Table 20 contains engineering test data made by the Soils Laboratory Florida Department of Transportation, Bureau of Materials and Research, on some of the major soil series in the survey area. These tests were made to help evaluate the soils for engineering purposes. The classifications given are based on data obtained by mechanical analysis and by tests to determine liquid limits and plastic limits.

The mechanical analyses were made by combined sieve and hydrometer methods (*3*). In this method the various grain-sized fractions are calculated on the basis of all the material in the soil sample, including that coarser than 2 millimeter in diameter. The mechanical analyses used in this method should not be used in naming textural classes of soils.

Compaction (or moisture-density) data are important in earthwork. If soil material is compacted at a successively higher moisture content, assuming that the compactive effort remains constant, the density of the compacted material increases until the optimum moisture content is reached. After that, density decreases with increase in moisture content. The highest dry density obtained in the compactive test is termed maximum dry density. As a rule, maximum strength of earthwork is obtained if the soil is compacted to the maximum dry density.

Liquid limit and plastic index indicate the effect of water on the strength and consistence of the soil material. As the moisture content of a clayey soil is increased from a dry state, the material changes from a semisolid to a plastic state. If the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material changes from semisolid to plastic state; and the liquid limit is the moisture content at which the soil material changes from a plastic to a liquid state. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is plastic. The data on liquid limit and plasticity index in this table are based on laboratory tests of soil samples.

Classification of the soils

The system of soil classification currently used was adopted by the National Cooperative Soil Survey in 1965. Readers interested in further details about the system should refer to "Soil taxonomy" (*7*).

The system of classification has six categories. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. In this system the classification is based on the different soil properties that can be observed in the field or those that can be inferred either from other properties that are observable in the field or from the combined data of soil science and other disciplines. The properties selected for the higher categories are the result of soil genesis or of factors that affect soil genesis. In table 21, the soils of the survey area are classified according to the system. Categories of the system are discussed in the following paragraphs.

ORDER. Ten soil orders are recognized as classes in the system. The properties used to differentiate among orders are those that reflect the kind and degree of dominant soil-forming processes that have taken place. Each order is identified by a word ending in *sol*. An example is Ultisols.

SUBORDER. Each order is divided into suborders based primarily on properties that influence soil genesis and are important to plant growth or that are selected to reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udults (*Ud*, meaning moisture regime, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of expression of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder

and a prefix that suggests something about the properties of the soil. An example is Paleudults (*Pale*, meaning old development, plus *udult*, the suborder of Ultisols that have a moist moisture regime).

SUBGROUP. Each great group may be divided into three subgroups: the central (typic) concept of the great groups, which is not necessarily the most extensive subgroup; the intergrades, or transitional forms to other orders, suborders, or great groups; and the extragrades, which have some properties that are representative of the great groups but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that is thought to typify the great group. An example is Typic Paleudults.

FAMILY. Families are established within a subgroup on the basis of similar physical and chemical properties that affect management. Among the properties considered in horizons of major biological activity below plow depth are particle-size distribution, mineral content, temperature regime, thickness of the soil penetrable by roots, consistence, moisture equivalent, soil slope, and permanent cracks. A family name consists of the name of a subgroup and a series of adjectives. The adjectives are the class names for the soil properties used as family differentiae. An example is clayey, kaolinitic, thermic Typic Paleudults.

SERIES. The series consists of soils that formed in a particular kind of material and have horizons that, except for texture of the surface soil or of the underlying substratum, are similar in differentiating characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineral and chemical composition.

Soil series and morphology

In this section, each soil series recognized in the survey area is described in detail. The descriptions are arranged in alphabetic order by series name.

Characteristics of the soil and the material in which it formed are discussed for each series. The soil is then compared to similar soils and to nearby soils of other series. Then a pedon, a small three-dimensional area of soil that is typical of the soil series in the survey area, is described. The detailed descriptions of each soil horizon follow standards in the Soil Survey Manual (*5*). Unless otherwise noted, colors described are for moist soil.

Following the pedon description is the range of important characteristics of the soil series in this survey area. Phases, or map units, of each soil series are described in the section "Soil maps for detailed planning."

Alapaha series

The Alapaha series is a member of the loamy, siliceous, thermic family of Arenic Plinthic Paleaquults. It consists of deep, poorly drained, moderately slowly permeable soils that formed in sandy and loamy marine sediments. These soils are on flats, in shallow depressions, and in poorly defined drainageways. They have a water table within 15 inches of the surface for periods of 3 to 6 months in most years. Most areas are flooded for 1 to 2 months annually. Slopes are less than 2 percent.

Alapaha soils are associated with Albany, Bethera, Foxworth, Duplin, Grady, Leefield, and Pansey soils. They are more poorly drained than Albany, Foxworth, Duplin, and Leefield soils. Albany soils have an A horizon 40 to 80 inches thick. Bethera, Duplin, and Grady soils have an A horizon less than 20 inches thick. Foxworth soils are sandy to a depth of 80 inches or more. Bethera soils have a clayey argillic horizon and mixed mineralogy. Grady soils have a clayey argillic horizon and kaolinitic mineralogy.

Typical pedon of Alapaha loamy sand in a wooded area approximately 3 1/2 miles northeast of Campbellton, approximately 2 miles north of Florida Highway 2; SW1/4 sec. 29, T. 7 N., R. 11 W.

A1—0 to 6 inches; very dark gray (10YR 3/1) loamy sand; weak medium granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

A21—6 to 12 inches; dark gray (10YR 4/1) loamy sand; weak medium granular structure; very friable; common fine and few medium roots; strongly acid; clear wavy boundary.

A22—12 to 34 inches; gray (10YR 6/1) loamy sand; weak medium granular structure; very friable; few fine and medium roots; many uncoated sand grains; strongly acid; gradual wavy boundary.

B21tg—34 to 48 inches; light gray (10YR 7/1) sandy clay loam with few medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; thin patchy clay films on ped faces; strongly acid; gradual wavy boundary.

B22tg—48 to 62 inches; light gray (10YR 7/1) sandy clay loam with common medium distinct yellowish brown (10YR 5/6), light yellowish brown (10YR 6/4), and strong brown (7.5YR 5/6) mottles and common medium prominent red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; clay films on ped faces; approximately 20 percent plinthite by volume; strongly acid.

Unless limed, the soil is strongly acid or very strongly acid in all horizons. The profile is 1 to 5 percent by volume strongly cemented ironstone pebbles.

Thickness of the A horizon is dominantly about 32 inches but ranges from 20 to 40 inches. The A1 or Ap

horizon is 4 to 6 inches thick and has hue of 10YR, value of 2 through 4, and chroma of 1 or 2 or hue of N and value of 2 through 4. The A21 horizon has hue of 10YR, value of 4 through 7, and chroma of 1 or 2. The A22 horizon has hue of 10YR, value of 5 through 7, and chroma of 1 or 2.

The B2tg horizon has hue of 10YR, value of 5 through 7, and chroma of 1 or 2 or hue of N and value of 5 through 7. Texture is sandy clay loam or sandy loam. The Btg horizon has few to many mottles of yellow, brown, gray, and red. In some pedons, the lower part is reticulately mottled with gray, yellow, brown, and red. Content of plinthite ranges from 10 to 25 percent by volume.

Albany series

The Albany series is a member of the loamy, siliceous, thermic family of Grossarenic Paleudults. It consists of somewhat poorly drained, nearly level and gently sloping soils on uplands. These soils formed in thick deposits of sandy and loamy material. They occur in small areas, generally at low elevations, throughout the county. Slopes range from 0 to 5 percent. Most areas are dissected by well defined drainage patterns. The water table is 12 to 30 inches below the surface for 1 to 2 months during most years.

Albany soils are associated with Alapaha, Clarendon, Blanton, Bonifay, Foxworth, Lakeland, Leefield, Plummer, Rutlege, and Compass soils. They are more poorly drained than Blanton, Foxworth, and Lakeland soils. Like Bonifay soils, they are less than 5 percent plinthite within a depth of 60 inches. Foxworth and Lakeland soils are sandy to a depth of 80 inches or more. Alapaha, Leefield, and Compass soils have an argillic horizon within a depth of 20 to 40 inches. Compass soils are better drained than Alapaha soils. Albany and Clarendon soils have similar drainage, but Clarendon soils have a loamy argillic horizon within a depth of 20 inches. Rutlege soils are very poorly drained and have a thick umbric epipedon.

Typical pedon of Albany sand in an area of Albany sand where slopes are 0 to 2 percent, in woodland approximately 17 miles south of Marianna, about 150 feet east of Florida Highway 73, NW1/4SW1/4 sec. 18, T. 2 N., R. 9 W.

A1—0 to 8 inches; grayish brown (10YR 5/2) sand; single grained; loose; strongly acid; clear wavy boundary.

A21—8 to 26 inches; pale brown (10YR 6/3) sand; single grained; loose; medium acid; gradual wavy boundary.

A22—26 to 46 inches; light gray (10YR 7/2) sand; few medium distinct pale brown (10YR 6/3) mottles; single grained; loose; many uncoated sand grains; slightly acid; clear wavy boundary.

B21t—46 to 67 inches; light yellowish brown (10YR 6/4) sandy loam; common medium distinct strong brown (7.5YR 5/8), yellowish brown (10YR 5/6), very pale brown (10YR 7/4), and yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; few uncoated sand grains; very strongly acid; clear smooth boundary.

B22t—67 to 80 inches; light gray (10YR 7/2) sandy clay loam; common medium distinct brownish yellow (10YR 6/6) and yellow (10YR 8/6) mottles; moderate medium subangular blocky structure; firm; few sand lenses with few uncoated sand grains; few patchy, thin clay films on ped faces; very strongly acid.

The soil ranges from slightly acid to very strongly acid in the A horizon and from very strongly acid to medium acid in the B horizon. The solum thickness is more than 80 inches.

The A1 or Ap horizon has hue of 10YR, value of 3 through 5, and chroma of 1 or 2 and is 4 to 8 inches thick. The A2 horizon has hue of 2.5Y or 10YR, value of 5 to 7, and chroma 2 through 8 and has few to common, faint to distinct mottles of gray, yellow, or brown. It is 36 to 56 inches thick.

The B1 horizon, where present, has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 through 6 and has few to common mottles in shades of gray and yellow. It is 0 to 6 inches thick. The B2t horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 through 8. It has common to many distinct mottles of red, brown, yellow, and gray. Texture of the B2t horizon is sandy loam or sandy clay loam.

Apalachee series

The Apalachee series is a member of the very fine, montmorillonitic, thermic family of Fluvaquentic Dystrochrepts. It consists of nearly level, poorly drained, fine textured soils that formed in sediments on flood plains. These soils are on flood plains along major streams and rivers. Slopes are less than 2 percent. In most years, the water table is within a depth of 20 inches for 3 to 6 months and the soil is flooded for 1 to 3 months in winter and in spring.

Apalachee soils are associated with the Bethera, Dothan, Duplin, Esto, Hornsville, Faceville, Fuquay, and Orangeburg soils. Bethera and Duplin soils have an argillic horizon and occur at higher elevations. In addition, Bethera and Duplin soils do not have the reddish colors in the A horizon typical of the Apalachee soils. Dothan, Esto, Faceville, Fuquay, and Orangeburg soils are all well drained upland soils that have a well developed argillic horizon. In addition, Dothan and Orangeburg soils have less clay in the argillic horizon than Apalachee soils. Fuquay soils have an A horizon 20 to 40 inches thick and a loamy argillic horizon. Hornsville soils are

moderately well drained. They have a well defined argillic horizon and a decrease in clay content within a depth of 60 inches.

Typical pedon of Apalachee clay in a bahiagrass pasture having a few water oaks, adjacent to the Apalachicola River, southeast of Sneads, 1 1/2 miles south of U.S. Highway 90, 1/2 mile east of State Road 271; SW1/4SW1/4 sec. 6, T. 3 N., R. 6 W.

A—0 to 18 inches; reddish brown (5YR 4/3) clay; common medium distinct dark grayish brown (10YR 4/2) mottles; massive, crushes to weak angular and subangular blocky structure; firm; many fine roots and few medium roots; common pressure faces on faces of peds; common fine mica flakes; strongly acid; clear smooth boundary.

B21—18 to 25 inches; mottled reddish brown (5YR 4/4), gray (5YR 5/1), and dark reddish gray (5YR 4/2) clay; few medium distinct yellowish red (5YR 4/6) mottles; massive, crushes to weak angular and subangular blocky structure; firm, slightly sticky; many slickensides; many fine mica flakes; strongly acid; clear smooth boundary.

B22g—25 to 66 inches; gray (10YR 5/1) clay; common medium distinct dark yellowish brown (10YR 4/4) mottles; common fine faint yellowish brown (10YR 5/6) and few medium distinct yellowish red (5YR 4/6) mottles; massive, crushes to weak medium angular and medium subangular blocky structure; firm; very plastic and sticky when wet; common slickensides; many fine mica flakes; strongly acid.

The soil is very strongly acid or strongly acid in all horizons. Slope is nearly level. Some depressional areas and sloughs are included.

The A horizon has hue of 5YR, 7.5YR, or 10YR, value of 3 through 5, and chroma of 2 through 4. The A2 horizon is 12 to 18 inches thick in most pedons but ranges from 10 to 22 inches. Texture of the A horizon is generally clay but includes loam, silt loam, clay loam, or silty clay loam. The A horizon has few to many fine mica flakes and few to many pressure faces on ped faces.

The B horizon has hue of 5YR, 7.5YR, or 10YR; value of 4 and 5; and chroma of 1 and 2. Mottles are in shades of brown, yellow, and red. Texture is dominantly clay but ranges from silty clay loam to silty clay and clay. Slickensides are common in this horizon.

Bethera series

The Bethera series is a member of the clayey, mixed, thermic family of Typic Paleaquults. It consists of poorly drained soils in nearly level areas in the flatwoods or in slightly depressed areas that are subject to flooding. These soils formed in clayey marine materials. Areas are sparse but throughout the county. In most years the water table is within a depth of 15 inches for 3 to 5 months and depressions are flooded for 1 to 3 months. Slopes are 0 to 2 percent.

Bethera soils are associated with Alapaha, Clarendon, Duplin, Grady, Leefield, Pansey, and Compass soils. Bethera soils have an A horizon less than 20 inches thick, whereas the A horizon is 20 to 40 inches thick in Alapaha, Leefield, and Compass soils. In addition, Bethera soils have a B2tg horizon of clay loam or clay texture, whereas those soils have a B2tg horizon of sandy clay loam texture and are 5 percent or more plinthite within a depth of 60 inches. Bethera soils are more poorly drained than the Clarendon and Duplin soils, have a finer textured B2tg horizon than the Clarendon soils, and are less than 5 percent plinthite. Bethera soils have mixed mineralogy, whereas Grady soils have kaolinitic mineralogy. Bethera soils are similar in drainage to the Pansey soils but have a clayey B2tg horizon. Pansey soils have sandy clay loam B2tg horizons and are more than 5 percent plinthite within a depth of 60 inches.

Typical pedon of Bethera silt loam approximately 7 miles east of Bascom, 1 mile east of Florida Highway 164; SW1/4NE1/4 sec. 22, T. 6 N., R. 8 W.

A1—0 to 4 inches; very dark gray (10YR 3/1) silt loam; weak fine subangular blocky structure; friable; extremely acid; clear smooth boundary.

A2—4 to 6 inches; gray (10YR 5/1) silt loam; few medium distinct yellowish brown (10YR 5/4) and grayish brown (10YR 5/2) mottles; weak medium subangular blocky structure; friable; slightly sticky when wet; extremely acid; clear smooth boundary.

B21tg—6 to 18 inches; light gray (10YR 6/1) clay loam; common medium distinct pale brown (10YR 6/3) mottles; common fine distinct yellowish brown (10YR 5/4) mottles and few medium distinct yellowish brown (10YR 5/6) mottles; moderate fine and medium angular blocky and weak medium subangular blocky structure; firm; sticky when wet; thick patchy clay films on faces of peds; strongly acid; gradual wavy boundary.

B22tg—18 to 72 inches; light gray (10YR 6/1) clay; common medium distinct yellowish brown (10YR 5/8) mottles and few medium distinct yellowish brown (10YR 5/4) and strong brown (7.5YR 5/6) mottles; moderate fine and medium angular blocky structure; firm; very hard when dry; sticky and plastic when wet; thick continuous clay films on faces of peds; structure becomes weaker with depth; strongly acid.

The solum thickness is 60 inches or more. Unless limed, the soil ranges from extremely acid to medium acid in all horizons. In some pedons the A horizon is extremely acid.

The A horizon is dominantly silt loam. It is from 6 to 16 inches thick. The A1 or Ap horizon has hue of 2.5Y or 10YR, value of 2 through 4, and chroma of 2 or less. It is

2 to 8 inches thick. The A2 horizon has hue of 10YR or 2.5Y, value of 5 through 7, and chroma of 2 or less.

The B2tg horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 to 7; and chroma of less than 2. It has common mottles of brown, red, and yellow. Texture ranges from clay loam to clay; the weighted clay content in the upper 20 inches ranging from 35 to 60 percent.

Bibb series

The Bibb series is a member of the coarse-loamy, siliceous, acid, thermic family of Typic Fluvaquents. It consists of nearly level, poorly drained soils that formed in sandy and loamy fluvial sediments. These soils are in small to large drainageways and on flood plains that are subject to frequent flooding. The water table is within 10 inches of the surface for 6 months or more in most years. Slopes are 0 to 2 percent.

Bibb soils are associated with Alapaha, Albany, Clarendon, Grady, Pansey, Plummer, Rutlege, and Compass soils. Bibb soils differ from Alapaha, Albany, Clarendon, Grady, Pansey, Plummer, and Compass soils in that they have no argillic horizon. Bibb soils occur on low-lying flood plains, whereas the associated soils occur in slightly higher upland positions. In addition, Bibb soils do not contain plinthite. Plinthite is characteristic of Alapaha, Clarendon, Pansey, and Compass soils. Bibb soils do not have the thick black umbric epipedon of Rutlege soils. In addition, Rutlege soils are sandy throughout.

Typical pedon of Bibb loamy sand in a wooded area of Bibb soils east of Holmes Creek, approximately 5 miles southwest of Graceville, just north of bridge, north side of Florida Highway 277 west; SW1/4SW1/4 sec. 30, T. 6 N., R. 14 W.

A11—0 to 4 inches; very dark grayish brown (10YR 3/2) loamy sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

A12—4 to 18 inches; grayish brown (10YR 5/2) loamy sand; common fine distinct yellowish brown (10YR 5/4) mottles; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

C1g—18 to 38 inches; gray (10YR 6/1) sandy loam; common fine distinct brownish yellow (10YR 6/6) and yellowish brown (10YR 5/8) mottles; weak fine granular structure; very friable; strongly acid; gradual smooth boundary.

C2g—38 to 62 inches; light brownish gray (10YR 6/2) stratified loamy sand and sandy loam; weak fine granular structure; very friable; strongly acid.

The soil is strongly acid or very strongly acid in all horizons.

The thickness of the A horizon ranges from 8 to 18 inches. Texture is loamy sand or sandy loam. The A11 horizon has hue of 10YR, value of 2 through 4, and chroma of 2 or less. It is 3 to 6 inches thick. The A12 horizon has hue of 10YR, value of 5 through 7, and chroma of 2 or less.

The Cg horizon has hue of 5Y, 2.5Y, or 10YR; value of 5 through 7; and chroma of 2 or less. The Cg horizon has few to common mottles in shades of red, yellow, and brown. Texture is varied, ranging from sand to stratified layers of silt loam, but is commonly sandy loam.

Blanton series

The Blanton series is a member of the loamy, siliceous, thermic family of Grossarenic Paleudults. It consists of deep, moderately well drained, moderately permeable soils that formed in thick deposits of sandy marine sediments. These nearly level to sloping soils are on the Coastal Plain. During wet seasons they have a perched water table above the argillic horizon for less than 1 month in most years. Slope ranges from 0 to 8 percent.

Blanton soils are associated with the Albany, Bonifay, Foxworth, Fuquay, Lakeland, Chipola, Compass, and Troup soils. Blanton soils differ from Albany soils in being better drained and having fewer gray mottles in the upper part of the Bt horizon; they occur on similar landscapes. Blanton soils differ from Bonifay soils in being less than 5 percent plinthite within a depth of 60 inches. They occur on a landscape of broad flats, whereas Bonifay soils occur on rolling uplands. Blanton soils have a Bt horizon within a depth of 40 to 80 inches, whereas Foxworth and Lakeland soils are sandy to a depth of 80 inches or more. Foxworth and Blanton soils occur on similar landscapes, but Lakeland soils occur on rolling uplands. Blanton soils do not have the Bt horizon within a depth of 20 to 40 inches that is characteristic of Fuquay, Chipola, and Compass soils. In addition, Chipola soils have a red Bt horizon and Fuquay and Compass soils are more than 5 percent plinthite within a depth of 60 inches. Fuquay and Chipola soils occur on nearly level to rolling uplands. Compass and Blanton soils occur on similar landscapes. Blanton soils have a yellowish Bt horizon and are moderately well drained, whereas Troup soils have a reddish Bt horizon and are well drained. Troup soils occur at higher elevations than Blanton soils and on rolling uplands.

Typical pedon of Blanton coarse sand in a wooded area of Blanton coarse sand, 0 to 5 percent slopes, approximately 6 miles east-southeast of Malone and 2.5 miles south of Florida Highway 2; SW1/4NE1/4 sec. 7, T. 6 N., R. 8 W.

Ap—0 to 8 inches; brown (10YR 4/3) coarse sand; weak fine granular structure; crushes to single grained; loose; low organic matter content; strongly acid; abrupt wavy boundary.

A21—8 to 15 inches; yellowish brown (10YR 5/4) coarse sand; weak fine granular structure; crushes to single

grained; loose; few fine roots; strongly acid; gradual wavy boundary.

A22—15 to 41 inches; light yellowish brown (10YR 6/4) coarse sand; weak fine granular structure; crushes to single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

A23—41 to 63 inches; very pale brown (10YR 7/4); coarse sand; common medium distinct light yellowish brown (10YR 6/4) mottles; single grained; few root channels; medium acid; gradual wavy boundary.

B1—63 to 67 inches; light yellowish brown (10YR 6/4) loamy coarse sand; few medium distinct yellowish brown (10YR 5/8) mottles; weak fine granular structure; friable; strongly acid; clear wavy boundary.

B2t—67 to 80 inches; yellowish brown (10YR 5/8) sandy loam; common medium prominent yellowish red (5YR 5/8) mottles, common medium distinct light gray (10YR 7/2) mottles, and common medium faint light yellowish brown (10YR 6/4) and pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; strongly acid.

The solum thickness is more than 60 inches. The soil ranges from very strongly acid to medium acid in the A horizon and very strongly acid or strongly acid in the B horizon.

Thickness of the A horizon ranges from 40 to 80 inches but is commonly 54 to 68 inches. The A1 or Ap horizon has hue of 10YR, value of 3 through 6, and chroma of 1 through 3. It is 6 to 10 inches thick. The A21 and A22 horizons have hue of 10YR, value of 5 through 7, and chroma of 1 through 8. The A23 and A24 horizons, where present, have hue of 10YR, value of 5 through 8, and chroma of 1 through 8. Uncoated sand grains range from few in the upper part of the A2 horizon to many in the lower part. Few to common grayish and brownish mottles are in the lower part of the A2 horizon. In some pedons, horizontal, discontinuous lamellae and small pockets of lamellae occur in the lower part of the A2 horizon.

The B1 horizon, where present, has hue of 10YR, value of 5 through 7, and chroma of 3 through 8. It is loamy sand or loamy coarse sand and ranges from 4 to 20 inches in thickness. The B2t horizon has hue of 10YR, value of 5 through 7, and chroma of 3 through 8, or it has hue of 2.5Y, value of 6, and chroma of 4 and has few to common mottles of brown, yellow, or red.

The B2t horizon is sandy loam, fine sandy loam, or sandy clay loam. Plinthite occurs below a depth of 60 inches in some pedons and ranges to 5 percent.

Bonifay series

The Bonifay series is a member of the loamy, siliceous, thermic family of Grossarenic Plinthic Paleudults. It consists of well drained, nearly level to sloping upland soils that formed in thick beds of sandy and loamy materials. The water table is at depths of more than 72 inches. Slopes range from 0 to 8 percent.

Bonifay soils are associated with the Albany, Blanton, Foxworth, Dothan, Fuquay, Lakeland, Leefield, Chipola, Compass, and Troup soils. Bonifay soils differ from the Albany, Blanton, and Troup soils in being more than 5 percent plinthite within a depth of 60 inches. In addition, Bonifay soils are well drained, whereas Albany soils are somewhat poorly drained. Bonifay soils have a Bt horizon; Foxworth and Lakeland soils are sandy to a depth of more than 80 inches. Bonifay soils have an A horizon more than 40 inches thick, whereas Dothan soils have an A horizon less than 20 inches thick. Bonifay soils differ from Fuquay, Leefield, Chipola, and Compass soils in having a thicker A horizon. In addition, Chipola soils have a red B horizon and are less than 5 percent plinthite. Leefield and Compass soils are more poorly drained than Bonifay soils.

Typical pedon of Bonifay sand, 0 to 5 percent slopes, approximately 2 miles east of the Marianna city limits; SE1/4SE1/4 sec. 1, T. 4 N., R. 10 W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) sand; single grained; loose; many fine roots; strongly acid; clear wavy boundary.

A21—5 to 14 inches; yellowish brown (10YR 5/6) sand; single grained; loose; many fine roots; strongly acid; clear wavy boundary.

A22—14 to 35 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; common fine roots; few medium faint mottles of very pale brown (10YR 7/3); strongly acid; clear wavy boundary.

A3—35 to 45 inches; brownish yellow (10YR 6/8) loamy sand; common medium faint mottles of very pale brown (10YR 7/3) and yellowish brown (10YR 5/6); weak medium granular structure; loose; few fine roots; common clean sand grains; few small ironstone pebbles; few small plinthite nodules; strongly acid; clear wavy boundary.

B21t—45 to 58 inches; light yellowish brown (10YR 6/4) sandy loam; common medium distinct mottles of light gray (10YR 7/2) and yellowish brown (10YR 5/4); weak medium subangular blocky structure; very friable; few ironstone pebbles; few plinthite nodules; strongly acid; clear wavy boundary.

B22t—58 to 63 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct yellowish red (5YR 4/6), strong brown (7.5YR 5/6), and light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable; few ironstone pebbles; thin patchy clay films on faces of peds; estimated 5 to 10 percent plinthite; strongly acid; clear wavy boundary.

B23t—63 to 68 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct yellowish red (5YR 5/8), strong brown (7.5YR 5/6), and pale brown (10YR 6/3) mottles; moderate medium su-

bangular blocky structure; friable; few ironstone pebbles; thin patchy clay films on faces of peds; estimated 10 percent plinthite; strongly acid.

The solum thickness ranges from 60 to more than 80 inches. Unless limed, the soil is strongly acid or very strongly acid in all horizons. In some pedons, a few small ironstone pebbles occur throughout the soil.

Thickness of the A horizon is most commonly 40 to 56 inches but ranges from 40 to 80 inches. The A1 or Ap horizon has hue of 10YR, value of 3 through 6, and chroma of 3 or less. It is 3 to 6 inches thick. The A2 horizon has hue of 10YR, value of 5 through 8, and chroma of 3 through 8. Light gray or white uncoated sand grains are common in the A2 horizon. The A3 horizon, where present, has hue of 10YR, value of 5 through 7, and chroma of 3 through 8. It has common uncoated sand grains and few balls or lamellae of sandy loam. Texture is sand or loamy sand.

The B2t horizon has hue of 10YR, value of 5 or 6, and chroma of 4 through 8 and has few to common mottles of yellow, brown, red, and gray. The texture is dominantly sandy clay loam but ranges to sandy loam. This horizon generally contains few ironstone pebbles and is 5 to 25 percent plinthite.

Chipola series

The Chipola series is a member of the loamy, siliceous, thermic family of Arenic Hapludults. It consists of well drained, moderately rapidly permeable, nearly level to sloping soils that formed in loamy and sandy marine sediments. These soils occur in broad areas of the Coastal Plain uplands and stream terraces. Slopes range from 0 to 8 percent.

The Chipola soils are associated with Blanton, Bonifay, Dothan, Faceville, Fuquay, Lakeland, Orangeburg, Red Bay, Troup, and Wicksburg soils. The Chipola soils have an A horizon 20 to 40 inches thick, whereas Blanton, Bonifay, and Troup soils have an A horizon more than 40 inches thick. Dothan, Faceville, Orangeburg, and Red Bay soils have an A horizon less than 20 inches thick and a Bt horizon that does not have a 20 percent decrease in clay content within a depth of 60 inches. Fuquay soils are more than 5 percent plinthite within a depth of 60 inches. In addition, Fuquay soils have a yellow argillic horizon, but Chipola soils have a red argillic horizon. Wicksburg soils have a clayey argillic horizon that does not have a 20 percent decrease in clay content within 60 inches. Lakeland soils are sandy to a depth of 80 inches or more.

Typical pedon of Chipola loamy sand in an area of Chipola loamy sand, 0 to 5 percent slopes, in a planted slash pine woodland approximately 6 miles north of Marianna, about 3/4 mile north of Florida Highway 162 and 1/2 mile east of the Chipola River; NE1/4NW1/4 sec. 32, T. 6 N., R. 10 W.

Ap—0 to 10 inches; dark brown (10YR 4/3) loamy sand; weak medium granular structure; very friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

A21—10 to 22 inches; yellowish red (5YR 4/8) loamy coarse sand; moderate medium granular structure; very friable; many fine roots; strongly acid; clear wavy boundary.

A22—22 to 32 inches; reddish yellow (5YR 6/6) loamy coarse sand; moderate medium granular structure; very friable; common uncoated sand grains; common fine roots; strongly acid; clear wavy boundary.

A23—32 to 35 inches; red (2.5YR 5/8) loamy coarse sand, moderate medium granular and weak medium subangular blocky structure; very friable; few medium quartz pebbles; strongly acid; gradual wavy boundary.

B2t—35 to 56 inches; red (2.5YR 4/8) coarse sandy loam; weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; few medium quartz pebbles; very strongly acid; gradual wavy boundary.

B3—56 to 75 inches; red (2.5YR 4/8) loamy coarse sand; weak medium subangular blocky and moderate medium granular structure; very friable; few medium quartz pebbles; strongly acid; gradual wavy boundary.

C—75 to 94 inches; red (2.5YR 5/8) coarse sand; weak medium granular structure and single grained; very friable; few pockets of loamy sand; many uncoated sand grains; common medium quartz pebbles; strongly acid.

The solum thickness ranges from 40 to more than 60 inches. Clay content decreases by more than 20 percent within a depth of 60 inches. Unless limed, the soil ranges from strongly acid to very strongly acid in all horizons.

Thickness of the A horizon is commonly 28 to 36 inches but ranges from 20 to 40 inches. The A1 or Ap horizon has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 to 4. The A21 and A22 horizons have hue of 5YR, 7.5YR, or 10YR; value of 4 to 6; and chroma of 4 through 8. The A23 or A3 horizons, where present, have hue of 7.5YR, 5YR, or 2.5YR; value of 4 to 6; and chroma of 4 through 8.

The B21t horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 6 to 8. The texture is coarse sandy loam, sandy loam, or sandy clay loam. The B3 horizon has color similar to that of the B2t horizon. It is sandy loam or coarse loamy sand. The C horizon is sand or coarse sand and has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8.

Clarendon series

The Clarendon series is a member of the fine-loamy, siliceous, thermic family of Plinthaquic Paleudults. It consists of nearly level, somewhat poorly drained soils on uplands. These soils formed in thick beds of loamy marine sediments. They occur throughout the county, generally in small areas that are dissected by poorly defined drainage patterns. Slopes are 0 to 2 percent. The water table is at a depth of 10 to 40 inches for 3 to 5 months in most years.

Clarendon soils are associated with Alapaha, Albany, Dothan, Leefield, Pansey, and Compass soils. Clarendon soils have a thinner A horizon than Alapaha and Leefield soils. Compass soils are moderately well drained and have clayey texture in the lower argillic horizon. Albany soils have an A horizon 40 to 80 inches thick. They do not contain plinthite. Clarendon soils are more poorly drained than Dothan soils and have gray mottles in the upper 10 inches of the argillic horizon. Clarendon soils are better drained than Pansey soils.

Typical pedon of Clarendon fine sandy loam approximately 5 miles southeast of Marianna, about 1 mile south of U.S. Highway 90; SW1/4SE1/4 sec. 20, T. 4 N., R. 9 W.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak medium granular structure; very friable; slightly acid; abrupt smooth boundary.

A2—8 to 16 inches; light yellowish brown (2.5Y 6/4) fine sandy loam; weak medium granular structure; very friable; very strongly acid; gradual smooth boundary.

B21t—16 to 21 inches; light yellowish brown (10YR 6/4) sandy clay loam with few fine distinct yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) mottles and common medium distinct light brownish gray (2.5Y 6/2) mottles; weak medium subangular blocky structure; friable; common patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B22t—21 to 26 inches; mottled light brownish gray (2.5Y 6/2), red (2.5YR 4/6), yellowish brown (10YR 5/8), and strong brown (7.5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; few patchy clay films on faces of peds; approximately 20 percent plinthite; very strongly acid; gradual wavy boundary.

B23t—26 to 52 inches; reticulately mottled gray (10YR 6/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), and red (2.5YR 5/6) mottles; weak medium subangular blocky structure; friable; 10 percent plinthite; few pockets of uncoated sand grains 1/2 to 1 inch in diameter; few clay films along faces of peds; very strongly acid; gradual wavy boundary.

B3g—52 to 84 inches; gray (10YR 6/1) light sandy clay loam with pockets and lenses of sandy loam and loamy sand and with common medium distinct yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), and red (2.5YR 4/6) mottles; weak medium subangular blocky structure; friable; very few patchy clay films; very strongly acid.

The solum thickness is 80 inches or more. The soil is strongly acid or very strongly acid in all horizons but the A horizon, which ranges to slightly acid.

Thickness of the A horizon is 10 to 18 inches. The A1 or Ap horizon has hue of 10YR, value of 3 through 5, and chroma of 1 or 2. Some pedons have an A2 or A3 horizon that has hue of 10YR, value of 5, and chroma of 1 or 2.

The upper part of the Bt horizon has hue of 10YR, values 5 through 7, and chroma 3 through 6. Texture is sandy loam, fine sandy loam, or sandy clay loam. Few fine and medium, faint to distinct mottles that have chroma of 2 or less are in the upper 10 inches of the Bt horizon. Mottles increase with depth, both in size and intensity. The lower part of the Bt horizon is reticulately mottled gray, brown, yellow, and red. The Bt horizon is more than 5 percent plinthite at a depth ranging from 28 to 58 inches but commonly at about 36 inches. Texture of the Bt horizon is dominantly sandy clay loam that is 18 to 35 percent clay in the upper 20 inches of the argillic horizon.

Compass series

The Compass series is a member of the coarse-loamy, siliceous, thermic family of Plinthic Paleudults. The series consists of deep, moderately well drained, moderately slowly permeable, nearly level and gently sloping soils that formed in thick deposits of loamy and clayey marine sediments. These soils are on broad uplands and sloping hillsides along drainageways in the Coastal Plain. The lower part of the subsoil is saturated in winter and early in spring. Water runs off the surface slowly. Slopes range from 0 to 8 percent.

Compass soils are associated with the Alapaha, Albany, Clarendon, Blanton, Bonifay, Chipola, Dorovan, Dothan, Fuquay, Leefield, Pamlico, Pansey, and Tifton soils. They are similar in horizonation and texture to the Alapaha, Chipola, Fuquay, and Leefield soils but differ in being better drained than the Alapaha and Leefield soils and less well drained than the Chipola and Fuquay soils. In addition, Chipola soils have no plinthite within a depth of 60 inches and have a red argillic horizon. The Albany, Blanton, and Bonifay soils have an A horizon more than 40 inches thick. The Clarendon, Dothan, Pansey, and Tifton soils have an A horizon less than 20 inches thick. Dorovan and Pamlico soils are organic soils and are more poorly drained than Compass soils.

Typical pedon of Compass loamy sand, 0 to 2 percent slopes, in a wooded area about 5 miles southeast of Marianna, 1 mile south of U.S. Highway 90, about 1/2

mile east of dirt crossroads on north side of old U.S. Highway 90 (old Federal Road); NE1/4SE1/4 sec. 20, T. 4 N., R. 9 W.

A1—0 to 8 inches; dark gray (10YR 4/1) loamy sand; moderate medium granular structure; very friable; many fine and medium roots, common large roots; very strongly acid; clear smooth boundary.

B1—8 to 16 inches; yellowish brown (10YR 5/4) loamy sand; few medium distinct dark gray (10YR 4/1) vertical streaks in root channels; moderate medium granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

B21t—16 to 22 inches; yellow (10YR 7/6) sandy loam; common medium faint very pale brown (10YR 7/4) mottles; moderate medium granular structure; very friable; common fine and medium roots; few ironstone nodules; very strongly acid; clear wavy boundary.

B22t—22 to 33 inches; brownish yellow (10YR 6/8) sandy loam; common medium faint very pale brown (10YR 7/4) mottles; moderate medium granular and weak medium subangular blocky structure; friable; slightly hard when dry; few medium and fine roots; few ironstone nodules; very strongly acid; clear smooth boundary.

B23t—33 to 40 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium distinct yellow (10YR 7/8) and strong brown (7.5YR 5/6) mottles; common medium prominent red (2.5YR 4/6) mottles, and few medium distinct light gray (10YR 7/2) mottles in lower 2 to 3 inches; moderate medium subangular blocky structure; friable; hard when dry; few fine roots; sand grains coated and bridged with clay; few thin discontinuous clay films; estimated 5 to 10 percent plinthite; very strongly acid; gradual wavy boundary.

B24t—40 to 57 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium distinct very pale brown (10YR 7/3), strong brown (7.5YR 5/6), and light gray (10YR 7/2) mottles; common medium prominent yellowish red (5YR 4/8) mottles and common fine faint yellow (10YR 6/8) and pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; hard when dry; few fine roots; estimated 10 to 15 percent plinthite; few discontinuous clay films on surfaces of peds; very strongly acid; clear wavy boundary.

IIB25t—57 to 64 inches; mottled light gray (10YR 7/1), yellowish brown (10YR 5/8), pale brown (10YR 6/3), brownish yellow (10YR 6/8), and red (2.5YR 4/6) sandy clay; strong medium subangular blocky structure; firm; very hard when dry; yellowish colors slightly brittle; clay films on surface of peds; few sand lenses and clay streaks; very strongly acid; gradual wavy boundary.

IIB26t—64 to 74 inches; reticulately mottled yellowish brown (10YR 5/8), strong brown (7.5YR 5/8), red (2.5YR 4/6), brownish yellow (10YR 6/8), pale brown (10YR 6/3), and white (10YR 8/1) clay; weak medium and coarse subangular blocky structure; firm;, very hard when dry; yellowish colors slightly brittle; clay films on surface of peds; white color more clayey; very strongly acid.

Solum thickness ranges from 60 to 80 inches or more. Unless limed, the soil is very strongly acid or strongly acid throughout. Depth to horizons that are 5 percent or more plinthite ranges from 30 to 50 inches. The A horizon and the upper part of the Bt horizon are 0 to 5 percent ironstone nodules.

Thickness of the A horizon ranges from 20 to 40 inches. The A1 or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2; hue of 2.5Y and value of 3 or 4; or hue of N and value of 3 or 4.

The B1 horizon has hue of 10YR or 2.5Y, value of 4 through 7, and chroma of 2 through 6. The B21t horizon, where present, has hue of 10YR or 2.5YR, value of 5 through 7, and chroma of 4 through 8. Texture is sandy loam or fine sandy loam. The B22t, B23t, and B24t horizons have hue of 10YR, value of 6 through 8, and chroma of 6 or 8 and contain few to common yellow, brown, and red mottles throughout. Mottles that have chroma of 2 are few to common between depths of 30 and 40 inches. Texture of the B22t, B23t, and B24t horizons is sandy loam, fine sandy loam, or sandy clay loam.

Depth to the IIB25t and IIB26t horizons is dominantly 40 to 60 inches but ranges to 80 inches in some pedons. These horizons are mottled in hue of 10YR, value of 5 through 8, and chroma of 1 through 8; hue of 7.5YR, value of 5 or 6, chroma of 6 or 8; or hue of 5YR and 2.5YR, value of 4 through 6, and chroma of 4 through 8. Texture is sandy clay or clay. Some pedons contain a few small pockets or lenses of sand or sandy loam.

Dorovan series

The Dorovan series is a member of the dysic, thermic family of Typic Medisaprists. It consists of very poorly drained, acid, highly decomposed organic materials more than 51 inches thick. The organic matter is chiefly decomposed leaves, twigs, and roots and common partially decomposed woody fragments. These soils occur in low, depressed, mostly ponded areas of the Coastal Plain uplands. Water covers the surface much of the time. Slopes are less than 1 percent and are generally concave.

Dorovan soils are associated with Alapaha, Clarendon, Grady, Leefield, Pamlico, Pansey, Pantego, Plummer, and Rutlege soils. All but the Pamlico soils are mineral soils. Pamlico soils are similar to Dorovan soils, but the

organic material is less than 51 inches thick and is underlain by sandy mineral material.

Typical pedon of Dorovan muck in an area of Dorovan-Pamlico association in a cypress swamp approximately 3 miles northwest of Cottondale, 1/4 mile west of Florida Highway 169; SE1/4SW1/4 sec. 14, T. 5 N., R. 12 W.

Oa1—0 to 12 inches; black (10YR 2/1) muck with some partially decomposed moss, leaves, and twigs; 30 to 50 percent fiber unrubbed, 5 to 10 percent rubbed; massive; friable; common roots and partially decomposed limbs; very strongly acid; diffuse wavy boundary.

Oa2—12 to 38 inches; black (10YR 2/1) muck; about 30 percent fiber unrubbed, about 5 percent rubbed, fibers remaining after rubbing are partially decomposed roots and limbs; massive; friable; few to common roots; very strongly acid; diffuse wavy boundary.

Oa3—38 to 80 inches; black (10YR 2/1) muck; 20 to 30 percent fiber unrubbed; less than 5 percent rubbed; massive; friable; few undecomposed roots and limbs; very strongly acid.

Thickness of the organic material ranges from 51 to more than 80 inches. The soil is strongly acid or very strongly acid throughout. The Oa horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or hue of N and value of 2 or 3. Unrubbed, the fiber content is 10 to 40 percent; rubbed, it is less than 1/6 of the volume.

The IIC horizon, where present, has hue of 10YR, value of 3 to 5, and chroma of 2 or less. The texture of the IIC horizon is dominantly sand but ranges from sand to sandy loam.

Dothan series

The Dothan series is a member of the fine-loamy, siliceous, thermic family of Plinthic Paleudults. It consists of deep, well drained, moderately slowly permeable soils that formed in thick beds of loamy marine sediments. These nearly level to strongly sloping soils are on uplands. Slopes range from 0 to 12 percent. The water table is perched above the subsoil for 1 to 6 days after heavy rainfall. At other times it is below a depth of 72 inches.

Dothan soils are associated with the Clarendon, Esto, Faceville, Fuquay, Leefield, Chipola, Orangeburg, Compass, Tifton, and Wicksburg soils. Dothan soils differ from Clarendon soils in being well drained and having no mottles of chroma 2 or less within the upper 20 inches of the argillic horizon. Dothan soils differ from the Esto, Faceville, and Orangeburg soils in being more than 5 percent plinthite within a depth of 60 inches. In addition, Dothan soils are yellowish brown and have no mottles in the upper part of the Bt horizon, whereas Esto soils are mottled in the upper part of the Bt horizon. The upper part of the Bt horizon in Faceville soils is red and has no mottles, and Orangeburg soils are red throughout. Esto and Faceville soils have a clayey argillic horizon. Dothan soils have an A horizon less than 20 inches thick, whereas Fuquay, Leefield, Chipola, Compass, and Wicksburg soils have an A horizon 20 to 40 inches thick. In addition, Leefield and Compass soils are not as well drained as Dothan soils. Tifton soils are more than 5 percent by volume ironstone pebbles.

Typical pedon of Dothan loamy sand in a cultivated area of Dothan loamy sand, 2 to 5 percent slopes, approximately 1 mile south of Marianna, 100 feet west of Florida Highway 73; NE1/4 sec. 16, T. 4 N., R. 10 W.

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) loamy sand; weak medium granular structure; very friable; many fine roots; slightly acid; clear wavy boundary.

B21t—5 to 10 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; slightly acid; gradual wavy boundary.

B22t—10 to 34 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few clay films on faces of peds; few small ironstone pebbles; strongly acid; gradual wavy boundary.

B23t—34 to 54 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium distinct strong brown (7.5YR 5/8), yellowish red (5YR 4/8), and pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable; few to common clay films on faces of peds; estimated 20 percent plinthite; strongly acid; clear wavy boundary.

B24t—54 to 76 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct strong brown (7.5YR 5/8) and light gray (10YR 7/2) mottles and common medium prominent yellowish red (5YR 4/8) and red (2.5YR 4/6) mottles; weak medium subangular blocky structure; friable; many clay films on faces of peds; estimated 10 percent by volume red plinthite; strongly acid.

Solum thickness ranges from 60 to more than 80 inches. Unless limed, the soil is strongly acid or very strongly acid throughout. Depth to horizons that are 5 percent or more plinthite ranges from 30 to 54 inches. Ironstone pebbles make up 0 to 5 percent by volume of the A horizon and 0 to about 3 percent of the Bt horizon.

Thickness of the A horizon is less than 20 inches. The A1 or Ap horizon and the A2 horizon, where present, have hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4.

The B21t and B22t horizons have hue of 10YR, value of 5 or 6, and chroma of 6 or 8; hue of 7.5YR, value of 5, and chroma of 6 or 8; or hue of 2.5Y, value of 7, and chroma of 6 or 8. The B23t and B24t horizons have hue of 10YR or 2.5Y, value of 7, and chroma of 6 or 8 or hue of 10YR, value of 5, and chroma of 4 or 6. Mottles are in

shades of red, yellow, brown, white, and gray. Texture of the B2t horizon is dominantly sandy clay loam but ranges to sandy clay in the lower part. The B24t horizon is commonly reticulately mottled with red, yellow, brown, white, and gray.

Duplin series

The Duplin series is a member of the clayey, kaolinitic, thermic family of Aquic Paleudults. It consists of deep, moderately well drained, moderately slowly permeable soils that formed in thick, clayey sediments on marine terraces. These nearly level to gently sloping soils are in broad areas adjacent to large stream flood plains. Slope ranges from 0 to 5 percent along local drainageways. The water table is within a depth of 24 to 40 inches for 1 to 4 months during most years. Slightly depressed areas have a water table within 10 to 30 inches for 2 to 4 months during extended wet seasons.

Duplin soils are associated with the Blanton, Esto, Hornsville, Faceville, Fuquay, Chipola, Orangeburg, Troup, and Wicksburg soils. Blanton and Troup soils are on higher lying convex ridges and have an A horizon 40 to 80 inches thick and a loamy control section. In addition, they are better drained. Esto and Faceville soils are also better drained than Duplin soils. Faceville soils have redder colors. Hornsville soils are better drained, have mixed mineralogy, and have a decrease in clay content within a depth of 60 inches. Fuquay and Chipola soils are better drained than Duplin soils and have an A horizon 20 to 40 inches thick and a loamy control section. Orangeburg soils are well drained and have a fine-loamy control section. Wicksburg soils have an A horizon 20 to 40 inches thick and are well drained.

Typical pedon of Duplin fine sandy loam in a cultivated area of Duplin fine sandy loam, 2 to 5 percent slopes, approximately 3 miles southeast of Graceville, 1/4 mile north of Florida Highway 169, 1/2 mile west of Florida Highway 193; NW1/4SW1/4 sec. 12, T. 6 N., R. 13 W.

Ap—0 to 9 inches; very dark gray (10YR 3/1) fine sandy loam; moderate medium granular and weak medium subangular blocky structure; very friable; medium acid; abrupt smooth boundary.

B1t—9 to 17 inches; light yellowish brown (10YR 6/4) sandy clay loam; common medium distinct yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable; medium acid; clear wavy boundary.

B21t—17 to 23 inches; light yellowish brown (10YR 6/4) clay; common medium distinct light gray (10YR 7/2), yellowish red (5YR 4/8), and strong brown (7.5YR 5/8) mottles; weak medium angular blocky and moderate medium subangular blocky structure; firm; patchy clay films on faces of peds; strongly acid; gradual wavy boundary.

B22t—23 to 46 inches; yellowish brown (10YR 5/8) clay that has common medium distinct light gray (10YR 7/1), strong brown (7.5YR 5/8), and light yellowish brown (10YR 6/4) mottles and common medium prominent yellowish red (5YR 5/8) and red (2.5YR 5/6) mottles; moderate medium angular blocky structure; firm; thick continuous clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23tg—46 to 64 inches; mottled light gray (10YR 7/1), yellowish red (5YR 5/6), strong brown (7.5YR 5/8), yellowish brown (10YR 5/8), and red (2.5YR 4/8) clay; moderate fine and medium subangular blocky structure; firm; slightly sticky; few ironstone pebbles; few plinthite nodules; strongly acid.

Unless limed, the soil is very strongly acid or strongly acid in all horizons.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 2 or less. The A2 horizon, where present, has hue of 10YR or 2.5Y, value of 4 through 7, and chroma to 4.

The B1t horizon has hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 4 or 6. Texture is fine sandy loam or sandy clay loam. The B2t horizon has hue of 7.5YR, 10YR, or 2.5Y; value of 4 through 7; and chroma of 3 through 8. The lower part of the B2t horizon has colors similar to those of the upper part of the B2t horizon or is mottled, or it is gray and has high chroma mottles. Mottles that have chroma of 2 or less are within a depth of 30 inches. The B2t horizon is sandy clay or clay. It is 35 to 55 percent clay and less than 30 percent silt.

Esto series

The Esto series is a member of the clayey, kaolinitic, thermic family of Typic Paleudults. It consists of well drained, deep, slowly permeable, gently sloping to sloping soils on the uplands. These soils formed in clayey marine sediments. They occur as small slightly eroded to eroded areas, generally on small knolls and short choppy side slopes throughout the county. The water table is below a depth of 72 inches throughout the year. Slopes range from 2 to 8 percent.

Esto soils are associated with Dothan, Duplin, Faceville, Fuquay, Chipola, Orangeburg, Troup, and Wicksburg soils. The Bt horizon of Esto soils is more than 35 percent clay, whereas that of Dothan and Orangeburg soils is less than 35 percent clay. Esto soils are better drained than Duplin soils. In Faceville soils, the upper part of the Bt horizon is reddish and unmottled, whereas in Esto soils it is mottled. Esto soils have a thinner A horizon and a higher clay content in the Bt horizon than Fuquay and Chipola soils. Esto soils have an A horizon less than 20 inches thick; Troup soils have an A horizon more than 40 inches thick. Esto soils have a thinner A horizon than Wicksburg soils.

Typical pedon of Esto loamy sand in a wooded area of Esto loamy sand, 2 to 5 percent slopes, 1/4 mile north of Florida Highway 166 and 4 miles north of Marianna; NE1/4SW1/4 sec. 23, T. 5 N., R. 10 W.

A1—0 to 3 inches; grayish brown (10YR 5/2) loamy sand; moderate medium granular structure; very friable; many fine medium and large roots; strongly acid; clear smooth boundary.

A2—3 to 12 inches; yellowish brown (10YR 5/4) loamy sand; moderate medium granular structure; many fine medium and large roots; strongly acid; clear smooth boundary.

B1t—12 to 18 inches; reddish yellow (7.5YR 6/6) sandy clay loam; moderate medium subangular and weak medium angular blocky structure; firm; slightly sticky when wet; hard when dry; many clay films on faces of peds; few medium roots; very strongly acid; gradual wavy boundary.

B21t—18 to 36 inches; reddish yellow (5YR 6/6) clay with common fine and medium distinct light gray (10YR 7/2) mottles; firm; very hard when dry; very sticky and plastic when wet; many thick continuous clay films on faces of peds; very strongly acid; gradual wavy boundary.

B22t—36 to 58 inches; mottled reddish brown (2.5YR 5/4) and light gray (10YR 7/1) clay with few medium distinct white (10YR 8/1) and strong brown (7.5YR 5/8) mottles and few medium prominent dusky red (10R 3/4) mottles and pale red (10R 6/2) streaks; moderate fine angular blocky and moderate medium subangular blocky structure; firm; very hard when dry; plastic when wet; many thick continuous clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23t—58 to 81 inches; mottled light reddish brown (5YR 6/4) and light gray (10YR 7/1) sandy clay with few fine distinct light yellowish brown (10YR 6/4), strong brown (7.5YR 5/6), and dusky red (10R 3/4) mottles; weak fine and medium angular and blocky structure; firm; hard when dry; plastic when wet; many thick clay films; very strongly acid.

The soil is very strongly acid or strongly acid throughout. Solum thickness is more than 60 inches.

The A1 horizon or Ap horizon has hue of 10YR, value of 3 through 5, and chroma 2 through 8. It is 3 to 8 inches thick. The A2 horizon has hue of 10YR or 7.5YR, value of 4 through 6, and chroma of 3 through 8.

The B1t horizon, where present, has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 through 8. Texture ranges from sandy loam to sandy clay. The B21t horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 4 through 8. The upper Bt horizon has few to common mottles in shades of red, yellow, and brown. The lower part of the B2t horizon has common to many mottles in shades of red, yellow, brown, and gray, or it lacks a matrix color and is mottled in these colors. Texture of the B2t horizon is typically sandy clay but ranges from clay loam to clay.

Faceville series

The Faceville series is a member of the clayey, kaolinitic, thermic family of Typic Paleudults. It consists of deep, well drained, moderately permeable soils that formed in fine or clayey marine sediments. These gently sloping to strongly sloping soils are on upland ridges and hillsides. The water table is below a depth of 10 feet. Slopes range from 2 to 15 percent.

Faceville soils are associated with Dothan, Esto, Fuquay, Greenville, Chipola, Orangeburg, Tifton, and Wicksburg soils. Faceville soils differ from Dothan, Fuquay, Chipola, Orangeburg, and Tifton soils in having a clayey argillic horizon. In addition, Fuquay and Chipola soils have an A horizon more than 20 inches thick. Dothan, Fuquay, and Tifton soils are more than 5 percent plinthite within 60 inches. Faceville soils are similar to the Esto soils but have a thick red Bt horizon that is not mottled in the upper part. Greenville soils have no mottles throughout the Bt horizon. Wicksburg soils have an A horizon more than 20 inches thick and are mottled in the upper part of the Bt horizon.

Typical pedon of Faceville loamy fine sand in a cultivated area of Faceville loamy fine sand, 2 to 5 percent slopes, about 1 mile northwest of Marianna and 1 mile north of U.S. Highway 90; SW1/4SE1/4 sec. 28, T. 5 N., R. 10 W.

Ap—0 to 5 inches; brown (10YR 4/3) loamy fine sand; moderate medium granular structure; friable; few fine roots; few ironstone pebbles; strongly acid; abrupt wavy boundary.

B21t—5 to 20 inches; red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; firm; few ironstone pebbles; thin patchy clay films on faces of peds; strongly acid; gradual wavy boundary.

B22t—20 to 30 inches; red (2.5YR 4/6) sandy clay; few fine distinct yellowish red (5YR 4/8) mottles and common medium distinct light yellowish brown (10YR 6/4) and pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; firm; few ironstone and quartz pebbles; thin patchy clay films on faces of peds; strongly acid; gradual wavy boundary.

B23t—30 to 46 inches; mottled strong brown (7.5YR 5/6), yellowish red (5YR 4/8), and red (2.5YR 4/6) sandy clay; strong fine and medium angular blocky structure; very firm; many thick clay films on faces of peds; few ironstone and quartz pebbles; very strongly acid; gradual wavy boundary.

B24t—46 to 61 inches; mottled strong brown (7.5YR 5/6), yellowish red (5YR 4/8), and red (2.5YR 4/6) clay with common medium distinct mottles of white

(10YR 8/1) kaolin clay; strong fine and medium angular blocky structure; very firm; many thick clay films on faces of peds; few ironstone and quartz pebbles; very strongly acid; clear wavy boundary.

IIC—61 to 70 inches; mottled white (10YR 8/1) light red (2.5YR 6/6), red (10YR 4/6), yellowish red (5YR 4/6), light reddish brown (2.5YR 6/4), brownish yellow (10YR 6/8), and pale brown (10YR 6/3) fine sandy loam that has streaks and pockets of sand; massive; firm in place; crushes to friable; few uncoated sand grains; strongly acid.

The solum thickness is more than 60 inches. Unless limed, the soil is very strongly acid or strongly acid throughout.

The A1 or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 through 4. The surface layer of eroded phases has hue of 7.5YR, value of 5, and chroma of 6 through 8 or hue of 5YR, value of 4 or 5, and chroma of 3 through 8. Some pedons have an A2 horizon. Where present, it is dominantly fine sandy loam and has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 through 8. The content of ironstone pebbles in the A horizon ranges from none to about 10 percent.

The B1 horizon, where present, has hue of 7.5YR, 5YR, or 2.5YR; value of 4 or 5; and chroma of 4 to 8. It is sandy clay loam 4 to 8 inches thick. The B2t horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 4 through 8. Mottles of brown and yellow occur in the B22t horizon, and in many pedons the B23t and B24t horizons are mottled with red, yellow, and brown. Light gray or white kaolinite mottles occur in the B23t and B24t horizons in many pedons. Texture of the B2t horizon is sandy clay or clay. Some pedons are less than 5 percent plinthite within a depth of 60 inches. In many pedons, the IIC horizon described is absent, and a mottled sandy clay loam B3 horizon is below the B2t horizon.

Foxworth series

The Foxworth series is a member of the thermic, coated family of Typic Quartzipsamments. It consists of moderately well drained, nearly level to sloping soils on uplands. These soils formed in thick beds of sandy sediments. They occur in small areas at low elevations, dominantly in the south-central part of the county. The landscape is slightly undulating and is dissected by poorly defined to well defined drainage patterns. Slopes range from 0 to 8 percent. A water table fluctuates between depths of 40 and 72 inches for 1 to 3 months during most years and between 30 and 40 inches for less than 30 cumulative days in some years.

Foxworth soils are associated with Albany, Alapaha, Blanton, Fuquay, Lakeland, Compass, and Troup soils. Alapaha, Albany, Blanton, Fuquay, Leefield, Compass, and Troup soils all have an argillic horizon. In addition, Foxworth soils are less well drained than Alapaha, Albany, and Leefield soils. Lakeland soils do not have a seasonal water table within 80 inches of the surface.

Typical pedon of Foxworth sand in a wooded area of Foxworth sand, 0 to 5 percent slopes, about 8 miles east of Compass Lake, 0.25 mile east of Jack Creek Bridge on graded road, 150 feet south of road; NW1/4NW1/4 sec. 17, T. 2 N., R. 10 W.

A11—0 to 4 inches; grayish brown (10YR 5/2) sand; single grained; loose; many fine roots; strongly acid; gradual wavy boundary.

A12—4 to 10 inches; brown (10YR 5/3) sand; single grained; loose; common fine roots; strongly acid; clear smooth boundary.

C1—10 to 40 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; common fine roots; strongly acid; gradual wavy boundary.

C2—40 to 52 inches; very pale brown (10YR 7/4) sand; common fine distinct yellowish brown (10YR 5/6) mottles and common fine faint pale brown mottles; single grained; loose; common uncoated sand grains; few fine roots; strongly acid; gradual wavy boundary.

C3—52 to 58 inches; light gray (10YR 7/1) sand; many fine distinct yellowish brown (10YR 5/6) mottles, common medium distinct strong brown (7.5YR 5/6) and yellowish red (5YR 4/6) mottles, and many fine faint very pale brown mottles; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

C4—58 to 64 inches; very pale brown (10YR 7/4) sand; many fine faint light gray and light yellowish brown mottles, many fine distinct strong brown (7.5YR 5/6) and yellowish red (5YR 4/6) mottles; single grained; loose; few fine roots; many uncoated sand grains; strongly acid; gradual wavy boundary.

C5—64 to 80 inches; light gray (10YR 7/2) sand; common fine faint very pale brown and light yellowish brown mottles and few fine distinct yellowish brown (10YR 5/6, 5/8) mottles; single grained; loose; many uncoated sand grains; strongly acid.

Thickness of sand is more than 80 inches. The soil is very strongly acid to medium acid throughout. Texture is sand or fine sand throughout. Silt and clay content in the 10- to 40-inch control section is 5 to 10 percent.

The A1 or Ap horizon has hue of 10YR, value of 3 through 5, and chroma of 1 through 3 or hue of 2.5Y, value of 4 or 5, chroma of 2.

The C1 and C2 horizons have hue of 10YR, value of 5 through 7, and chroma of 3 through 8 or hue of 2.5Y, value of 7 or 8, and chroma of 2. Few to common, fine to large mottles or pockets of uncoated sand grains occur in these horizons in some pedons but do not indicate wetness.

The C3, C4, and C5 horizons have hue of 10YR, value of 6 through 8, and chroma of 1 through 4. Few to

common, fine or medium strong brown or yellowish red segregated iron mottles indicate a fluctuating water table. Depth to mottles is commonly 45 to 60 inches but ranges from 40 to 72 inches.

Fuquay series

The Fuquay series is a member of the loamy, siliceous, thermic family of Arenic Plinthic Paleudults. It consists of deep, well drained, slowly permeable soils that formed in sandy and loamy marine sediments. These nearly level to sloping soils are in upland areas. Slopes are generally smooth to convex and range from 0 to 8 percent.

Fuquay soils are associated with Albany, Blanton, Bonifay, Foxworth, Dothan, Esto, Lakeland, Leefield, Chipola, Orangeburg, Compass, Tifton, Troup, and Wicksburg soils. Fuquay soils have an A horizon 20 to 40 inches thick, whereas Albany, Blanton, Bonifay, and Troup soils have an A horizon more than 40 inches thick. In addition, Albany soils are somewhat poorly drained. Fuquay soils have an argillic horizon, whereas Foxworth and Lakeland soils are sandy to a depth of 80 inches or more. Dothan, Esto, Orangeburg, and Tifton soils have an A horizon less than 20 inches thick. Esto soils have clayey texture, and Orangeburg soils are red. Fuquay soils are similar in horizonation to Leefield, Chipola, Compass, and Wicksburg soils. Leefield soils are more poorly drained than Fuquay soils. Chipola soils have a red B horizon and do not have the 5 percent plinthite content within a depth of 60 inches characteristic of Fuquay soils. Compass soils are similar to Fuquay soils but are in a fine loamy family. Wicksburg soils have a clayey argillic horizon.

Typical pedon of Fuquay coarse sand in a wooded area of Fuquay coarse sand, 0 to 5 percent slopes, approximately 7 miles southwest of Marianna on west side of Florida Highway 167; SE1/4SE1/4 sec. 34, T. 4 N., R. 11 W.

A1—0 to 6 inches; dark grayish brown (10YR 4/2) coarse sand; weak medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

A21—6 to 12 inches; yellowish brown (10YR 5/4) loamy coarse sand; weak medium granular structure; very friable; many fine and common medium roots; strongly acid; gradual smooth boundary.

A22—12 to 32 inches; yellowish brown (10YR 5/6) loamy coarse sand; weak medium granular structure; very friable; common fine and medium roots; strongly acid; gradual wavy boundary.

B1—32 to 44 inches; yellowish brown (10YR 5/8) coarse sandy loam; weak medium subangular blocky and moderate medium granular structure; friable to very friable; strongly acid; gradual wavy boundary.

B21t—44 to 55 inches; yellowish brown (10YR 5/8) sandy clay loam; few medium distinct strong brown (7.5YR 5/8) and yellowish red (5YR 4/6) mottles; moderate medium subangular blocky structure; friable; more than 5 percent plinthite; thin discontinuous clay films on faces of peds; strongly acid; gradual wavy boundary.

B22t—55 to 80 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium distinct light gray (10YR 7/2) mottles and few medium distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; approximately 15 percent plinthite; thick clay films on faces of peds; strongly acid.

The solum thickness is 60 inches or more. Unless limed, the soil is strongly acid or very strongly acid in all horizons. The profile is about 1 to 5 percent by volume ironstone pebbles.

Thickness of the A horizon ranges from 20 to 40 inches. The A1 or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. The A2 horizon has hue of 10YR, value of 4 through 6, and chroma of 3 through 6.

The B1 horizon has hue of 10YR, value of 5, and chroma of 4 through 8. Texture is coarse sandy loam or sandy loam. The B21t horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 through 8. Texture is dominantly sandy clay loam but ranges to sandy loam. The B22t horizon is similar to the B21t horizon in color and texture and, in addition, is mottled in shades of yellow, brown, red, and gray. Plinthite occurs at depths of 40 to 60 inches. It makes up 5 to 30 percent by volume.

Grady series

The Grady series is a member of the clayey, kaolinitic, thermic family of Typic Paleaquults. It consists of deep, poorly drained, slowly permeable soils that formed in clayey marine sediments. These nearly level soils are in flat areas, depressions, and poorly defined drainageways. In most years the water table is at or near the surface for 6 to 8 months and depressions are ponded for 2 to 6 months. Slope is less than 2 percent.

Grady soils are associated with Alapaha, Clarendon, Bethera, Dothan, Faceville, Greenville, Leefield, Orangeburg, and Pansey soils. Grady soils differ from Alapaha and Leefield soils in having an argillic horizon that is more than 35 percent clay within 20 inches of the surface. Grady soils have kaolinitic mineralogy, whereas Bethera soils have mixed mineralogy. Dothan, Faceville, Greenville, and Orangeburg soils are all well drained and at higher elevations on the landscape. In addition, Dothan, Orangeburg, and Pansey soils are less than 35 percent clay in the argillic horizon.

Typical pedon of Grady fine sandy loam in a bahiagrass pasture approximately 2 miles southeast of Graceville, about 1/4 mile north of Florida Highway 169; NE1/4SW1/4 sec. 12, T. 6 N., R. 13 W.

Ap—0 to 6 inches; dark gray (10YR 4/1) fine sandy loam; weak medium granular and weak medium subangular blocky structure; friable; medium acid; abrupt wavy boundary.

B21tg—6 to 11 inches; grayish brown (2.5Y 5/2) clay; weak fine subangular blocky structure; firm; slightly acid; clear smooth boundary.

B22tg—11 to 46 inches; light gray (10YR 6/1) clay; many coarse faint gray (10YR 5/1), grayish brown (10YR 5/2), pale brown (10YR 6/3), and strong brown (7.5YR 5/6) mottles, common medium distinct yellowish red (5YR 4/6) and yellowish brown (10YR 5/6) mottles, and common medium prominent red (2.5YR 4/8) mottles; strong fine and medium angular blocky structure; very firm; thick clay films on faces of peds; strongly acid; gradual wavy boundary.

B23tg—46 to 76 inches; light gray (10YR 7/1) clay; many coarse prominent red (10YR 4/8) mottles and common medium distinct yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), and light gray (10YR 6/1) mottles; moderate fine and medium angular blocky and weak medium subangular blocky structure; very firm; very strongly acid; thin discontinuous clay films on faces of peds.

The solum thickness is 60 inches or more. Unless limed, the soil is strongly acid or very strongly acid in all horizons.

The A horizon is sandy loam, fine sandy loam, loam, or clay loam and is 6 to 10 inches thick. The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 2 through 4, and chroma of 2 or less. Some pedons have an A2 horizon. Where present, it has hue of 10YR or 2.5Y, value of 5 through 7, and chroma of 2 or less.

The B1 horizon, where present, and B2tg horizon have hue of 10YR or 2.5Y, value of 4 through 7, and chroma of 1 or less or hue of 2.5Y, value of 5, and chroma of 2. Texture of the B1 horizon is sandy clay loam, clay loam, or sandy clay. Texture of the Btg horizon is sandy clay or clay. The Btg horizon has few to many mottles of brown, yellow, red, and gray. The average clay content in the upper 20 inches of the Btg horizon ranges from 45 to 60 percent.

Greenville series

The Greenville series is a member of the clayey, kaolinitic, thermic family of Rhodic Paleudults. It consists of well drained, clayey soils on uplands. These soils formed in clayey marine sediments high in sand. They occur mostly in the north-central and northwestern parts of the county, generally as moderately large mapped areas. The landscape is dissected by moderately defined drainage patterns. The water table is below a depth of 6 feet. Slope is 2 to 8 percent.

Greenville soils are associated with Faceville, Grady, Oktibbeha variant, Orangeburg, and Red Bay soils. Greenville soils are similar to Faceville soils in textures but differ in having a dark reddish brown A horizon and a dark red Bt horizon. In addition, Faceville soils are mottled in the lower part of the Bt horizon. Grady soils are poorly drained and have gray colors. Oktibbeha variant soils have mixed mineralogy. Orangeburg and Red Bay soils are less than 35 percent clay in the Bt horizon.

Typical pedon of Greenville fine sandy loam in a bahiagrass pasture of Greenville fine sandy loam, 2 to 5 percent slopes, approximately 4 miles north of Marianna on old Bumpnose road, on west side of road; SW1/4NE1/4 sec. 29, T. 5 N., R. 10 W.

Ap—0 to 8 inches; dark reddish brown (2.5YR 3/4) fine sandy loam; weak fine and medium subangular blocky structure; very friable; many fine roots; few iron-manganese concretions 1/4 to 1/2 inch in diameter; strongly acid; abrupt smooth boundary.

B21t—8 to 52 inches; dark red (2.5YR 3/6) sandy clay; moderate fine and medium subangular blocky structure; friable; many fine roots in upper part, few fine roots in lower part; few thin patchy clay films on faces of peds; common iron-manganese concretions 1/4 to 1 inch in diameter; strongly acid; gradual smooth boundary.

B22t—52 to 72 inches; dark red (2.5YR 3/6) sandy clay; moderate fine and medium subangular blocky structure; friable; few fine roots; common patchy clay films on faces of peds; common iron-manganese concretions 1/2 to 1 inch in diameter; strongly acid.

Solum thickness is 72 inches or more. Unless limed, the soil is strongly acid or very strongly acid in all horizons. In most pedons, few to common iron or iron-manganese concretions occur throughout the profile.

The A1 or Ap horizon has hue of 7.5YR, 5YR, or 2.5YR; value of 2 through 4; and chroma of 2 through 4. Thickness ranges from 6 to 8 inches.

The B1 horizon, where present, is generally sandy clay loam but ranges to clay loam or sandy clay. It is generally about 6 inches thick. This horizon has hue of 10YR or 2.5YR, value of 2 or 3, and chroma of 4 through 6. The B2t horizon has hue of 2.5YR or 10R, value of 2 or 3, and chroma of 2 through 6. Some pedons have mottles of red, yellow, and brown in the lower part of the B2t horizon. The texture is sandy clay or clay. The clay content ranges from 35 to 55 percent.

Herod series

The Herod series is a member of the fine-loamy, siliceous, nonacid, thermic family of Typic Fluvaquents. It consists of poorly drained, moderately permeable, nearly level soils that occur on the flood plains of the Chipola River and its tributaries throughout the center of the county. These soils formed in sandy and loamy alluvium.

The water table is within a depth of 10 inches for 2 to 5 months in most years. The soils are frequently flooded for brief periods. Slopes are less than 2 percent.

Herod soils are associated with Yonges soils on the landscape and with Alapaha, Albany, Bibb, Compass, Dothan, Duplin, Hornsville, Faceville, Grady, Greenville, Orangeburg, and Red Bay soils. Alapaha, Albany, and Compass soils have an A horizon more than 20 inches thick. Bibb soils are coarse-loamy and acid. Dothan, Duplin, Hornsville, Faceville, Greenville, Orangeburg, and Red Bay soils are well drained or moderately well drained, have an argillic horizon, and occur higher on the landscape in the uplands. Grady soils have a clayey argillic horizon and are strongly acid. Yonges soils have a fine-loamy argillic horizon.

Typical pedon of Herod sandy loam in a wooded area of Yonges-Herod association, about 3 miles south of Marianna, about 400 yards west of the Chipola River channel; NW1/4SE1/4 sec. 26, T. 4 N., R. 10 W.

A1—0 to 5 inches; dark grayish brown (10YR 4/2) sandy loam; weak medium granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.

C1g—5 to 12 inches; light gray (10YR 6/1) sandy loam; weak medium granular structure; very friable; common fine and medium roots; few thin strata of sand; scattered fragments of partially decomposed forest litter; strongly acid; gradual wavy boundary.

C2g—12 to 22 inches; light brownish gray (10YR 6/2) sandy loam; moderate medium granular structure; very friable; few thin discontinuous strata of sand and sandy clay loam; few fragments of partially decomposed forest litter; medium acid; gradual smooth boundary.

C3g—22 to 56 inches; light gray (10YR 6/1) sandy clay loam; common thin strata of sand, loamy sand, and sandy loam; common medium and fine distinct yellowish brown (10YR 5/6) and brown (10YR 5/3) mottles and common fine distinct brownish yellow mottles; massive; firm; few to common fragments of organic matter; neutral; gradual wavy boundary.

C4g—56 to 62 inches; light gray (10YR 6/1) sandy loam; common thin strata of sand; common medium distinct mottles of yellowish brown (10YR 5/6) and light yellowish brown (10YR 6/4); massive; friable; neutral.

Reaction is strongly acid or medium acid in the A horizon and ranges from medium acid to neutral in the Cg horizon. The content of organic carbon is more than 0.2 percent at a depth of 60 inches. The pH of the control section is 5.0 or more if measured in 0.01 molar calcium chloride.

The A1 horizon dominantly has hue of 10YR, value of 3 to 5, and chroma of 2 or 3 or hue of 2.5Y, value of 4, and chroma of 2. In some pedons where deposits of recent alluvium are on the surface, value ranges to 7 and chroma is 1. The texture is dominantly sandy loam but ranges from loamy sand to fine sandy loam and, in places where recent sediments are on the surface, to sand or fine sand.

The Cg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or value of 6 and chroma of 2; hue of 5Y, value of 5 to 7, and chroma of 1; or hue of 2.5Y, value of 6, and chroma of 2. Texture of the C horizon ranges from sandy loam to sandy clay loam. It is 20 to 35 percent clay in the 10- to 40-inch control section. Few to common thin strata of coarser or finer textured material are in the Cg horizon.

Hornsville series

The Hornsville series is a member of the clayey, kaolinitic, thermic family of Aquic Hapludults. It consists of nearly level or gently sloping, moderately well drained soils that formed in unconsolidated fine-textured marine sediments. These soils occur on broad flats and low ridges adjacent to large stream flood plains. They are most common in the northeastern part of the county. The water table is within a depth of 30 to 40 inches for 3 to 5 months in most years and within a depth of 30 inches for 1 to 2 months in some years. Slopes range from 0 to 5 percent.

Hornsville soils are associated with Apalachee, Blanton, Chipola, Duplin, Esto, Faceville, Fuquay, Orangeburg, Troup, and Wicksburg soils. Apalachee soils are on river flood plains, have no argillic horizon, and have montmorillonitic mineralogy. Blanton, Chipola, Dothan, Faceville, Fuquay, Orangeburg, Troup, and Wicksburg soils all are higher on the landscape than Hornsville soils, and all but the Blanton soils are well drained. Blanton and Troup soils have an A horizon 40 to 80 inches thick, and Chipola, Fuquay, and Wicksburg soils have an A horizon 20 to 40 inches thick. Dothan and Orangeburg soils are fine loamy. Duplin soils have less than a 20 percent decrease in clay within a depth of 60 inches. Faceville soils have no chroma 2 mottles within 24 inches of the upper boundary of the argillic horizon.

Typical pedon of Hornsville fine sandy loam in a wooded area of Hornsville fine sandy loam, 2 to 5 percent slopes, approximately 15 miles north of Sneads, on east side of Florida Highway 271; SE1/4NW1/4 sec. 13, T. 6 N., R. 8 W.

A1—0 to 4 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; medium acid; clear smooth boundary.

A2—4 to 9 inches; grayish brown (10YR 5/2) fine sandy loam; tongues and streaks of very dark gray (10YR 3/1) and splotches of yellowish brown (10YR 5/4); moderate medium granular structure; very friable;

common fine and medium roots; medium acid, clear smooth boundary.

B21t—9 to 19 inches; yellowish red (5YR 4/8) sandy clay; common medium distinct red (2.5YR 4/6), yellowish brown (10YR 5/8), and light yellowish brown (10YR 6/4) mottles and few medium distinct strong brown (7.5YR 5/8) and pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; firm; common fine mica flakes; many clay films on faces of peds; strongly acid; clear wavy boundary.

B22t—19 to 31 inches; mottled yellowish red (5YR 5/8), red (2.5YR 4/8), yellowish brown (10YR 5/8), strong brown (7.5YR 5/8), and light gray (10YR 7/2) sandy clay loam; few pockets and streaks of sandy loam and sandy clay loam; moderate medium angular blocky structure; some pockets that have weak medium subangular blocky structure; firm; pockets and streaks are friable; many fine mica flakes; thick clay films on faces of peds; strongly acid; irregular wavy boundary.

B23t—31 to 43 inches; mottled yellowish brown (10YR 5/8) and red (2.5YR 4/8) sandy clay; few medium distinct pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; firm; thick clay films on sandy clay gray mottles; patchy clay films on yellow and red peds; common fine mica flakes; few fine pockets of sandy loam; few horizontal and diagonal streaks of red sandy loam; strongly acid; clear smooth boundary.

B3—43 to 76 inches; mottled yellowish red (5YR 5/8), light gray (10YR 7/2), brownish yellow (10YR 6/8), and yellow (10YR 7/8) fine sandy loam; common medium distinct reddish yellow (5YR 6/6), few medium distinct strong brown (7.5YR 5/6), and few medium prominent red (2.5YR 3/6) mottles; weak medium granular structure; friable but crushes under pressure to very friable and loose; common fine mica flakes; few thin clay films on faces of peds; strongly acid.

Solum thickness ranges from 40 to more than 60 inches. Unless limed, the soil is strongly or very strongly acid throughout. Few to many fine mica flakes are in the B and C horizons in most pedons.

The A1 or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2; hue of 2.5Y, value of 4, and chroma of 2; or hue of N and value of 2 to 4. The A2 horizon has hue of 10YR, value of 5 to 7, and chroma of 1 to 4; or hue of 2.5Y, value 5 to 7, and chroma of 2 or 4. Texture is fine sandy loam.

Some pedons have a B1 horizon. Where present, it is 2 to 5 inches thick and has hue of 10YR, value of 5 or 6, and chroma of 6; hue of 2.5Y, value of 6, and chroma of 4; hue of 7.5YR, value of 5, and chroma of 6 or 8; or hue of 2.5YR and 5YR, value of 4, and chroma of 6 or 8. It has yellow, brown, and red mottles. Texture is sandy clay loam, fine sandy loam, or sandy loam.

The B21t horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8; hue of 7.5YR, value of 5, and chroma of 6 or 8; hue of 2.5YR, value of 4 or 5, and chroma of 6 or 8; hue of 5YR, value of 4 or 5, and chroma of 6 or 8; or hue of 2.5Y, value of 6, and chroma of 4. It has yellow, brown, or red mottles. The B22t, B23t, and B3 horizons are mottled with yellow, brown, and red and also have mottles in hue of 10YR or 2.5Y, value of 4 through 7, and chroma of 2 or less. Chroma 2 mottles occur within 24 inches of the upper boundary of the argillic horizon. Texture of the B2t horizon is sandy clay, clay loam, or clay. Texture of the B3 horizon is sandy clay loam, sandy loam, or fine sandy loam. Few to common streaks or pockets of coarser material are in the B2t horizon in many pedons. Weighted average clay content of the upper 20 inches of the B2t horizon ranges from 35 to 60 percent. Silt content is less than 30 percent.

Iuka series

The Iuka series is a member of the coarse-loamy, siliceous, acid, thermic family of Aquic Udifluvents. It consists of moderately well drained, nearly level, sandy soils in slightly depressed areas in the uplands. These soils formed in thick beds of sandy and loamy sediments washed in from adjacent sloping soils. The landscape is undulating. Slopes are 0 to 2 percent and are generally concave. The water table is within a depth of 40 inches for 1 to 3 months in most years. Brief flash floods are common in periods of heavy rainfall.

Iuka soils are associated with Chipola, Dothan, Esto, Faceville, Fuquay, Greenville, Orangeburg, Red Bay, Troup, and Wicksburg soils. All of these soils have an argillic horizon, whereas Iuka soils do not. Chipola soils have a red argillic horizon 20 to 40 inches below the surface. Dothan, Esto, Faceville, Greenville, Orangeburg, and Red Bay soils have an argillic horizon within 20 inches of the surface, and they are well drained. Troup soils have a reddish argillic horizon within 40 to 80 inches of the surface and are well drained to excessively drained.

Typical pedon of Iuka loam in a cultivated field approximately 5 miles north of Marianna, about 100 yards west of Florida Highway 167; NW1/4NW1/4 sec. 23, T. 5 N., R. 10 W.

Ap—0 to 12 inches; dark brown (7.5YR 4/2) loam; moderate medium granular structure; friable; many fine roots; strongly acid; abrupt smooth boundary.

A1—12 to 16 inches; dark brown (7.5YR 4/2) loam; moderate medium granular structure; friable; many fine roots; strongly acid; gradual wavy boundary.

C1—16 to 25 inches; yellowish brown (10YR 5/4) sandy loam; common medium faint dark gray (10YR 4/1) mottles; massive; very friable; common fine roots; very strongly acid; gradual wavy boundary.

C2g—25 to 56 inches; grayish brown (10YR 5/2) sandy loam; common medium distinct strong brown (7.5YR 5/8), dark brown (7.5YR 4/2), yellowish brown (10YR 5/6), light yellowish brown (10YR 6/4), and pale brown (10YR 6/3) mottles; massive; friable; common black firm concretions 1/2 to 1 inch in diameter; very strongly acid; gradual wavy boundary.

C3—56 to 72 inches; pale brown (10YR 6/3) sandy clay loam that has pockets and lenses of sandy loam and loamy sand; common medium distinct yellowish brown (10YR 5/6), gray (10YR 5/1), and strong brown (7.5YR 5/6) mottles; massive; friable; many black firm and hard concretions 1/2 to 1 inch in diameter; very strongly acid.

Unless limed, the soil is strongly acid or very strongly acid throughout. Thin bedding planes, pockets or lenses of contrasting textures are common in most pedons.

The A1 or Ap horizon has hue of 10YR or 7.5YR, value of 4 through 6, and chroma of 2 through 6. The texture of the A horizon ranges from loamy sand to loam.

The C1 horizon has hue of 10YR or 7.5YR, value of 4 through 6, and chroma of 2 through 8. The texture of the C1 horizon ranges from sandy loam to silt loam. The C2 horizon has hue of 10YR, value of 4 through 6, and chroma of 2 through 8; hue of 7.5YR, value of 4 or 5, and chroma of 2; or hue of 2.5Y, value of 5 or 6, and chroma of 4 or 6. In some pedons there is no matrix color and the C2 horizon is reticulately mottled with brown, yellow, and gray. The texture of the C2 horizon ranges from loamy sand to silt loam. Some pedons have a C3 horizon of sandy loam or clay loam below a depth of 40 inches. In most pedons, dark colored or black nodules or concretions are common in the C horizon.

Lakeland series

The Lakeland series is a member of the thermic, coated family of Typic Quartzipsamments. It consists of deep, excessively drained, very rapidly permeable, nearly level to steep soils that formed in thick deposits of sandy marine or eolian sediments. These soils occur on broad slopes on upland landscapes. Slopes range from 0 to 30 percent and are smooth to convex.

Lakeland soils are associated with Albany, Blanton, Foxworth, Chipola, Fuquay, Compass, and Troup soils. Lakeland soils are excessively drained and have no argillic horizon, whereas Albany soils are somewhat poorly drained and have an argillic horizon between depths of 40 and 60 inches. Blanton, Bonifay, and Troup soils all have an argillic horizon between depths of 40 and 80 inches. Chipola and Fuquay soils are well drained and have an argillic horizon within a depth of 20 to 40 inches. Foxworth soils are moderately well drained. In most years they have a water table between depths of 40 and 60 inches for brief periods in the rainy season. Compass soils are moderately well drained and have an argillic horizon within a depth of 20 to 40 inches.

Typical pedon of Lakeland sand in an idle field of Lakeland sand, 0 to 5 percent slopes, approximately 15 miles southeast of Marianna, about 100 feet east of Florida Highway 167; SE1/4SW1/4 sec. 34, T. 2 N., R. 11 W.

Ap—0 to 5 inches; dark brown (10YR 4/3) sand; single grained; loose; common fine roots; medium acid; abrupt smooth boundary.

C1—5 to 8 inches; yellowish brown (10YR 5/4) sand; single grained; loose; common fine roots; medium acid; clear wavy boundary.

C2—8 to 40 inches; yellowish brown (10YR 5/8) sand; single grained; loose; few fine roots; few uncoated sand grains; strongly acid; gradual wavy boundary.

C3—40 to 82 inches; very pale brown (10YR 7/4) sand; single grained; loose; many uncoated sand grains; strongly acid.

Thickness of the sand exceeds 80 inches. The soil is medium acid to very strongly acid throughout. Silt and clay content in the 10- to 40-inch control section is 5 to 10 percent.

The A1 or Ap horizon has hue of 10YR, value of 3 through 5, and chroma of 1 through 3 or hue of 2.5Y, value of 4 or 5, and chroma of 2.

The C horizon has hue of 10YR, value of 5 through 8, and chroma of 3 through 8; hue of 7.5YR and 5YR, value of 5 or 6, and chroma of 6 or 8; or hue of 2.5Y, value of 7 or 8, and chroma of 4. Most of the sand grains between depths of 10 and 40 inches are coated, but many uncoated sand grains are below 40 inches. In some pedons, small pockets of light gray or white uncoated sand occur below 40 inches.

Leefield series

The Leefield series is a member of the loamy, siliceous, thermic family of Arenic Plinthaquic Paleudults. It consists of somewhat poorly drained upland soils. These soils formed in deposits of sandy and loamy marine materials. They occur throughout the county but most commonly as small areas in the flatwoods. The landscape is dissected by poorly defined to moderately defined drainage patterns. Slopes are 0 to 2 percent. A perched water table is at a depth of 18 to 30 inches for about 4 months during the year.

Leefield soils are associated with Alapaha, Albany, Clarendon, Compass, Dothan, Foxworth, and Pansey soils. Leefield soils are similar to Alapaha and Compass soils but are better drained than Alapaha soils and more poorly drained than Compass soils. Leefield soils have an argillic horizon between depths of 20 and 40 inches, whereas Albany soils have an argillic horizon below 40 inches. Clarendon, Dothan, and Pansey soils have an argillic horizon within 20 inches of the surface and, in

addition, Dothan soils are well drained and Pansey soils are poorly drained. Foxworth soils are moderately well drained and do not have an argillic horizon within a depth of 80 inches.

Typical pedon of Leefield loamy sand in a bahiagrass pasture approximately 4 miles southeast of Graceville, about 3/4 mile east of Florida Highway 169; NE1/4SE1/4 sec. 18, T. 6 N., R. 12 W.

Ap—0 to 9 inches; very dark gray (10YR 3/1) loamy sand; few dark grayish brown (10YR 4/2) splotches; moderate medium granular structure; very friable; many fine roots; medium acid; abrupt wavy boundary.

A21—9 to 22 inches; light yellowish brown (10YR 6/4) loamy sand; few streaks of yellowish brown (10YR 5/6) root casts; common medium distinct yellow (10YR 7/6) mottles; weak medium granular structure; very friable; many fine roots; very strongly acid; clear wavy boundary.

A22—22 to 28 inches; light yellowish brown (10YR 6/4) loamy sand; common medium distinct light gray (10YR 7/2), yellow (10YR 7/6), and yellowish brown (10YR 5/6) mottles and few medium distinct strong brown (7.5YR 5/6) mottles; weak medium granular structure; very friable; few fine roots; very strongly acid; gradual wavy boundary.

B21t—28 to 43 inches; light yellowish brown (2.5Y 6/4) sandy loam; few medium distinct yellow (10YR 7/6) mottles; many coarse prominent yellowish brown (10YR 5/8) mottles; common medium distinct strong brown (7.5YR 5/6) and brownish yellow (10YR 6/6) mottles, and common coarse distinct light gray (10YR 7/1) and yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; more than 10 percent plinthite by volume; very strongly acid; diffuse irregular boundary.

B22t—43 to 84 inches; reticulately mottled sandy clay loam; yellowish brown (10YR 5/8) and light gray (10YR 7/1) sandy clay loam with common medium distinct strong brown (7.5YR 5/6), yellowish red (5YR 4/6), red (2.5YR 4/8), yellow (10YR 7/6), and pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; friable to firm; 5 to 10 percent plinthite by volume; very strongly acid.

The solum thickness is 60 inches or more. Unless limed, the soil is strongly acid or very strongly acid in all horizons. The profile is 0 to 5 percent by volume strongly cemented ironstone nodules.

The A1 or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 or less. The A2 horizon has hue of 5Y, 2.5Y, or 10YR; value of 5 to 8; and chroma of 2 to 6. Mottles range from none to common. Texture of the A horizon is dominantly loamy sand but ranges from sand to loamy fine sand.

The B1t horizon has hue of 2.5Y or 10YR, value of 6, and chroma of 4 to 8 and has mottles of gray or light gray. The B21t horizon has hue of 2.5Y or 10YR, value of 5 to 6, and chroma of 4 to 8 and has common to many mottles of red, brown, and gray. The B22t horizon has hue of 2.5Y and 10YR, value of 6 to 7, and chroma of 1 to 8 and has common to many mottles of red, brown, and gray. The lower part of the Bt horizon is commonly reticulately mottled with red, brown, and gray. Plinthite content ranges from 5 to 30 percent, commonly at depths of 35 to 60 inches. The Bt horizon is commonly sandy clay loam but ranges to sandy loam.

Oktibbeha variant

The Oktibbeha variant is a member of the very-fine, mixed, thermic family of Vertic Hapludalfs. It consists of moderately deep, moderately well drained, very slowly permeable soils that formed in beds of acid clayey sediments overlying soft rippable limestone. These gently sloping to strongly sloping soils occur on uplands. The landscape is dissected by poorly defined drainageways, many of which end in low depressions or limestone sinks that have underground drainage. The water table is below a depth of 72 inches. During periods of low rainfall the soil dries out, and cracks up to 1 inch wide extend through the upper part of the subsoil.

The Oktibbeha variant is associated with Esto, Faceville, Grady, Greenville, Orangeburg, and Red Bay soils. Oktibbeha variant soils have montmorillonitic mineralogy, whereas all the associated soils have kaolinitic mineralogy. In addition, Esto, Faceville, and Greenville soils have a less clayey argillic horizon. Grady soils occur in low depressed areas and are poorly drained. Orangeburg and Red Bay soils have a fine-loamy argillic horizon.

Typical pedon of Oktibbeha variant in a cultivated field of Oktibbeha Variant-Rock outcrop complex, 2 to 5 percent slopes, about 7 miles northwest of Marianna, approximately 100 feet east of Florida Highway 73; SE1/4SE1/4 sec. 16, T. 5 N., R. 11 W.

A1—0 to 2 inches; dark reddish brown (5YR 3/4) sandy clay; weak medium and fine subangular blocky structure; friable; many fine roots; medium acid; clear smooth boundary.

B21t—2 to 5 inches; yellowish red (5YR 4/6) clay; moderate fine and medium angular blocky structure; firm; common fine roots; few small ironstone pebbles and few iron-manganese concretions; clay films on faces of peds; strongly acid; clear wavy boundary.

B22t—5 to 17 inches; red (2.5YR 4/6) clay; moderate fine and medium angular blocky structure; firm; very hard when dry, very plastic when wet; few small ironstone pebbles; few soft to firm very small black manganese concretions; many clay films on faces of peds; strongly acid; irregular abrupt boundary.

B23t—17 to 28 inches; yellowish red (5YR 4/6) clay and about an equal proportion of yellowish brown (10YR 5/8); common, fine distinct black (5YR 2/1) soft manganese nodules; moderate fine angular blocky structure; very firm; very hard when dry; very plastic when wet; many clay films on faces of peds; very strongly acid; gradual wavy boundary.

B24t—28 to 48 inches; yellowish brown (10YR 5/6) clay; common fine distinct yellowish red (5YR 4/6) mottles and black (5YR 2/1) soft manganese nodules; strong fine angular blocky structure; very firm; extremely hard when dry, very plastic when wet; many clay films on faces of peds; very strongly acid; abrupt wavy boundary.

IICr—48 inches; soft rippable chalky limestone that is light gray (10YR 7/1) and white (10YR 8/2) with few splotches and streaks of yellow and strong brown.

The solum is 20 to about 50 inches thick over soft rippable chalky limestone. Unless limed, the soil is strongly acid or very strongly acid in the A and B horizons and neutral to moderately alkaline in the IICr horizon. Few to common ironstone pebbles are in some pedons.

The A1 or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3; hue of 7.5YR, value of 3 to 5, and chroma of 2 or 4; and, in eroded areas, hue of 5YR, value of 3 to 6, and chroma of 3 or 4. The texture ranges from fine sandy loam to clay. Thickness is 2 to 5 inches.

The B21t, B22t, and B23t horizons have hue of 7.5YR, 5YR, or 2.5YR; value of 4 or 5; and chroma of 3 through 8. In some pedons, these horizons contain few to common mottles of brown or yellow and the B23t horizon contains a few gray mottles. The B24t horizon has colors similar to those of the B21t, B22t, and B23t horizons and, in addition, has hue of 10YR, value of 5 or 6, and chroma of 4 to 8. Common to many mottles of yellow, red, brown, and gray occur in the B24t horizon. Texture of the Bt horizon is dominantly clay.

The IICr horizon is soft rippable chalky limestone that is white, light gray, pale brown, pale olive, or olive yellow. Some pedons are mottled or streaked with olive, brown, yellow, and gray.

This soil is a variant to the Oktibbeha series. It has mixed mineralogy, whereas the Oktibbeha series has montmorillonitic mineralogy.

Orangeburg series

The Orangeburg series is a member of the fine-loamy, siliceous, thermic family of Typic Paleudults. It consists of well drained, nearly level to sloping, deep, moderately permeable upland soils that formed in loamy deposits. Slopes are smooth to convex and 0 to 12 percent. There is no water table within a depth of 72 inches.

Orangeburg soils are associated with Chipola, Dothan, Esto, Faceville, Fuquay, Greenville, Red Bay, and Wicksburg soils. Chipola, Fuquay, and Wicksburg soils differ from Orangeburg soils in having an A horizon more than 20 inches thick. In addition, Fuquay soils have a yellowish brown argillic horizon and contain plinthite within a depth of 60 inches, and Wicksburg soils have a sandy clay argillic horizon. Dothan soils have a yellowish brown argillic horizon and are more than 5 percent plinthite within a depth of 60 inches. Esto, Faceville, and Greenville soils have a sandy clay argillic horizon. Red Bay soils have a dark reddish brown A horizon and a dark red argillic horizon.

Typical pedon of Orangeburg loamy sand in a slash pine plantation of Orangeburg loamy sand, 0 to 2 percent slopes, approximately 8 miles south of Marianna, on the west side of Florida Highway 71; SW1/4SE1/4 sec. 7, T. 3 N., R. 9 W.

Ap—0 to 9 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; many fine and common medium roots; slightly acid; abrupt wavy boundary.

B21t—9 to 17 inches; yellowish red (5YR 4/6) sandy clay loam; moderate medium granular and weak medium subangular blocky structure; very friable; few fine and medium roots; strongly acid; clear wavy boundary.

B22t—17 to 48 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure that crushes to moderate medium granular; friable; few fine and medium roots; very few thin patchy clay films on some faces of peds; strongly acid; gradual wavy boundary.

B23t—48 to 72 inches; red (2.5YR 5/8) sandy clay loam; weak medium subangular blocky structure that crushes to moderate medium granular; very friable; strongly acid.

The solum thickness is 60 inches or more. Unless limed, the soil reaction is strongly acid or very strongly acid. In some pedons the solum is up to about 5 percent by volume ironstone pebbles throughout.

The A1 or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 to 6 or hue of 7.5YR, value of 4 or 5, and chroma of 2 or 4. It is 6 to 10 inches thick. The A2 horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 3 to 6.

The B1 horizon, where present, has hue of 10YR, 7.5YR, or 5YR; value of 4 to 6; and chroma of 4 to 8. It ranges from dominantly sandy loam to light sandy clay loam and is 0 to 10 inches thick. The B21t, B22t, and B23t horizons have hue of 5YR, value of 4 or 5, and chroma of 6 to 8 or hue of 2.5YR, value of 3 to 5, and chroma of 6 or 8. Texture of the Bt horizon is dominantly sandy clay loam but ranges to sandy loam. Clay content of the upper 20 inches of the Bt horizon ranges from 18

to 35 percent. In places the lower part of the Bt horizon has few to common mottles of red, yellow, or brown.

Pamlico series

The Pamlico series is a member of the sandy or sandy-skeletal, siliceous, dysic, thermic family of Terric Medisaprists. It consists of well decomposed muck 16 to 40 inches thick overlying sandy mineral materials. These soils are nearly level and very poorly drained. They occur in flat or depressional areas of the uplands. Slopes are concave and are less than 1 percent. Except in periods of extended drought, the water table is near the surface or the soil is ponded.

Pamlico soils are associated with Alapaha, Clarendon, Dorovan, Grady, Leefield, Pansey, Plummer, and Rutlege soils. All these soils but Dorovan are mineral soils. Dorovan soils have organic material more than 51 inches thick. Alapaha and Leefield soils have an A horizon more than 20 inches thick and a sandy clay loam argillic horizon. Clarendon, Grady, and Pansey soils have an A horizon less than 20 inches thick underlain by a sandy clay loam argillic horizon. Pantego soils have an umbric epipedon high in organic materials and a sandy clay loam argillic horizon. Plummer soils have a sandy A horizon more than 40 inches thick and a sandy clay loam argillic horizon. Rutlege soils have a thick umbric epipedon. In addition, Alapaha, Leefield, and Pansey soils are more than 5 percent plinthite within a depth of 60 inches.

Typical pedon of Pamlico muck in an area of Pamlico-Pantego-Rutlege association, in a heavily wooded drainageway about 1 1/2 miles east of U.S. Highway 231, 1/4 mile north of Jackson-Calhoun County line; SE1/4SW1/4 sec. 17, T. 2 N., R. 11 W.

Oa—0 to 36 inches; black (10YR 2/1) muck; weak coarse granular structure; few partially decomposed leaves and twigs; approximately 30 percent fiber unrubbed; friable; slightly sticky; very strongly acid; clear wavy boundary.

IICg—36 to 60 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; many medium roots; very strongly acid.

The organic material ranges from 16 to 40 inches in thickness. Reaction is very strongly acid or extremely acid. The Oa horizon is dominantly black in hue of 10YR or 7.5YR, value of 2 or 3, and chroma of 3 or less or hue of N, value of 2 or 3. Fiber content is 10 to 33 percent unrubbed. The IICg horizon ranges from sand to loamy fine sand in texture and has hue of 10YR, value of 3 to 5, and chroma of 2 or less.

Pansey series

The Pansey series is a member of the fine-loamy, siliceous, thermic family of Plinthic Paleaquults. It consists of deep, poorly drained, slowly permeable soils that formed in loamy marine sediments. These nearly level soils are on broad flats, in poorly defined drainageways, and in scattered depressions. They generally occur as small mapped areas throughout the county. Slopes are less than 2 percent. The water table is within a depth of 18 inches during wet seasons, generally the winter months. Most areas are flooded for 1 to 3 months annually.

Pansey soils are associated with Alapaha, Albany, Clarendon, Bethera, Compass, Duplin, Grady, and Leefield soils. Alapaha, Compass, and Leefield soils have an argillic horizon between depths of 20 and 40 inches. In addition, Compass soils are moderately well drained, and Leefield soils are somewhat poorly drained. Albany soils are somewhat poorly drained and have an argillic horizon below 40 inches. Clarendon soils are somewhat poorly drained. Bethera, Duplin, and Grady soils have a sandy clay argillic horizon. In addition, Duplin soils are moderately well drained.

Typical pedon of Pansey fine sandy loam approximately 4 miles southeast of Graceville, approximately 3/4 mile east of Florida Highway 169; NE1/4SE1/4 sec. 18, T. 6 N., R. 12 W.

Ap—0 to 6 inches; very dark gray (10YR 3/1) fine sandy loam; moderate medium granular structure; very friable; many fine roots; very strongly acid; abrupt smooth boundary.

A2—6 to 19 inches; light brownish gray (10YR 6/2) fine sandy loam; common medium distinct brownish yellow (10YR 6/4) mottles and few medium distinct very pale brown (10YR 6/3) mottles; moderate medium granular structure; very friable; common fine roots; very strongly acid; clear smooth boundary.

B21tg—19 to 26 inches; light gray (10YR 6/1) sandy clay loam; few medium distinct light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/8) mottles and common medium distinct light gray (10YR 7/2) mottles; weak fine and medium subangular blocky structure; friable; few patchy clay films on faces of peds; very strongly acid; clear wavy boundary.

B22tg—26 to 53 inches; light gray (10YR 7/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) mottles; and common medium prominent yellowish red (5YR 4/6) mottles, and few medium distinct pale brown (10YR 6/3) mottles; moderate medium subangular blocky and weak fine angular blocky structure; friable to firm; clay films on faces of peds; about 15 percent plinthite by volume; very strongly acid; gradual wavy boundary.

B23tg—53 to 80 inches; light gray (10YR 7/1) fine sandy loam; few medium distinct yellowish red (5YR 5/8) mottles; many coarse distinct yellowish brown (10YR 5/8) mottles; common medium distinct strong brown (7.5YR 5/8), yellow (10YR 7/6), very pale brown

(10YR 7/4), and pale brown (10YR 6/3) mottles; moderate fine and medium subangular blocky structure; friable; patchy clay films on faces of peds; 5 to 10 percent plinthite by volume; very strongly acid.

The solum thickness is 60 inches or more. Unless limed, the soil is strongly acid or very strongly acid in all horizons. In some places the soil is up to 5 percent strongly cemented ironstone pebbles throughout.

Thickness of the A horizon ranges from 6 to 20 inches. The A1 or Ap horizon is 2 to 6 inches thick. It has hue of 10YR, value of 2 through 4, and chroma of 1 or hue of N, value of 2 to 4, and chroma of 0. The A2 horizon has hue of 10YR, value of 4 through 6, and chroma of 2 or less. It has mottles of brown and yellow.

A B1g horizon is present in some pedons. Where present, it has hue of 10YR, value of 5 through 7, and chroma of 1; value of 5 or 6 and chroma of 2; or hue of N, value of 5 or 6, and chroma of 0. Mottles range from few and faint to common and distinct and are yellow and brown. Texture is predominantly sandy loam or fine sandy loam but ranges to sandy clay loam. The B21tg horizon has hue of 10YR or N, value of 5 through 7, and chroma of 2 or less. It has few to many mottles of yellow, brown, and red. The texture is fine sandy loam or sandy clay loam. The B22tg and B23tg horizons have the same colors as the B21tg horizon or are reticulately mottled with gray, yellow, brown, and red. Plinthite content ranges from 5 to 30 percent. The B22tg horizon is sandy clay loam, and the B23tg horizon is fine sandy loam or sandy clay loam. Weighted clay content of the upper 20 inches of the Btg horizon is 18 to 35 percent.

Pantego series

The Pantego series is a member of the fine-loamy, siliceous, thermic family of Umbric Paleaquults. It consists of nearly level, very poorly drained, moderately permeable soils that formed in loamy marine deposits. These soils occur in nearly level and slightly depressed areas. Slopes are less than 2 percent. The water table is within a depth of 10 inches for 2 to 4 months during most years and between 10 and 40 inches for 3 to 6 months.

Pantego soils are associated with Alapaha, Albany, Clarendon, Bibb, Compass, Duplin, Foxworth, Grady, Leefield, Pamlico, Pansey, and Rutlege soils. Alapaha, Albany, Compass, and Leefield soils have an ochric epipedon and an A horizon more than 20 inches thick. In addition, Albany, Compass, and Leefield soils are better drained than Pantego soils. Clarendon, Duplin, Grady, and Pansey soils have no umbric epipedon, and Clarendon and Duplin soils are better drained. Duplin and Grady soils have a clayey argillic horizon. Bibb soils have no umbric epipedon and are sandy throughout. Foxworth soils are sandy throughout and are better drained. Pamlico soils are organic. Rutlege soils are similar to Pantego soils in drainage but have no argillic horizon.

Typical pedon of Pantego sandy loam in an area of Pamlico-Pantego-Rutlege association in a heavily wooded drainageway about 1 1/2 miles east of U.S. Highway 231, approximately 1/4 mile north of Jackson-Calhoun County line; SE1/4 sec. 17, T. 2 N., R. 11 W.

A—0 to 18 inches; very dark gray (10YR 3/1) sandy loam; weak medium granular structure; very friable; many fine and medium roots; high organic matter content; very strongly acid; clear smooth boundary.

B21tg—18 to 30 inches; dark gray (10YR 4/1) sandy clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; very strongly acid; gradual wavy boundary.

B22tg—30 to 72 inches; gray (10YR 6/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/6), yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), and pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; thin patchy clay films on faces of peds; very strongly acid.

Solum thickness is more than 60 inches. The soil is strongly acid or very strongly acid throughout. The A horizon has hue of 10YR or N, value of 2 or 3, and chroma of 2 or less. Thickness ranges from 10 to 20 inches.

The B2tg horizon has hue of 10YR, value of 3 to 7, and chroma of 2 or less or hue of 2.5Y, value of 6 or 7, and chroma of 2. It has few to common mottles of brown and yellow. Texture ranges from sandy loam to clay loam. Some pedons have a B3 horizon that has hue of 10YR, 2.5Y, or N; value of 4 through 7; and chroma of 2 or less and few to common mottles of higher chroma. Texture is sandy loam to sandy clay loam.

Plummer series

The Plummer series is a member of the loamy, siliceous, thermic family of Grossarenic Paleaquults. It consists of nearly level, poorly drained soils. These soils formed in thick beds of sandy and loamy materials. They occur on a nearly level to depressional landscape and along poorly defined drainageways. Slopes are 0 to 2 percent. The water table is within a depth of 10 inches for 3 to 6 months in most years. Most areas are flooded for brief periods annually. Depressions are ponded for more than 6 months in most years.

Plummer soils are associated with Albany, Alapaha, Clarendon, Bethera, Bibb, Blanton, Compass, Duplin, Foxworth, Grady, Leefield, and Pansey soils. Plummer soils are more poorly drained than Albany, Blanton, and Foxworth soils and occur lower on the landscape and in depressional areas. In addition, Foxworth soils are sandy to a depth of more than 80 inches. Alapaha, Compass, and Leefield soils have an A horizon 20 to 40 inches

thick, and Compass and Leefield soils are better drained than Plummer soils. Clarendon, Bethera, Duplin, Grady, and Pansey soils have an A horizon less than 20 inches thick. In addition, Clarendon and Duplin soils are better drained. Bibb soils are in a coarse-loamy family and have no argillic horizon.

Typical pedon of Plummer sand in a cultivated area approximately 2 1/2 miles north of Malone, about 1/4 mile south of Alabama-Florida State line; NW1/4SE1/4 sec. 20, T. 7 N., R. 9 W.

Ap—0 to 8 inches; dark gray (10YR 4/1) sand; weak medium granular structure; very friable; medium to high organic material; many fine roots; strongly acid; clear smooth boundary.

A12—8 to 12 inches; dark grayish brown (2.5Y 4/2) sand; weak medium granular structure; very friable to loose; low to medium organic material; many fine roots; strongly acid; clear smooth boundary.

A21g—12 to 24 inches; gray (10YR 6/1) sand; weak medium granular structure; very friable to loose; common uncoated sand grains; common fine roots; strongly acid; gradual wavy boundary.

A22g—24 to 56 inches; light gray (10YR 7/1) sand; weak medium granular structure; loose; many uncoated sand grains; strongly acid; gradual wavy boundary.

B21tg—56 to 66 inches; light gray (10YR 7/1) sandy clay loam; few fine faint yellowish brown mottles; moderate fine subangular blocky structure; friable; few thin patchy clay films on ped faces; strongly acid; gradual wavy boundary.

B22tg—66 to 80 inches; light gray (10YR 7/1) sandy clay loam; few lumps of sandy clay and streaks of sand in lower part; common medium distinct red (10YR 4/6) mottles and few medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/8) mottles; moderate, fine subangular blocky structure; friable; sandy clay lumps are firm; strongly acid.

The solum thickness is 72 inches or more. The soil is strongly acid or very strongly acid in all horizons.

Thickness of the A horizon ranges from 40 to 80 inches. The A1 or Ap horizon has hue of 10YR, 2.5Y, or 5Y; value of 2 through 4; and chroma of 2 or less. The A2g horizon has hue of 10YR, 2.5Y, or 5Y; value of 5 through 8; and chroma of 2 or less.

The Btg horizon has hue of N, 10YR, or 5Y; value of 5 through 7; and chroma of 2 or less. Mottles in shades of yellow, brown, red, and strong brown range from few to many in some pedons. The Bt horizon is sandy loam or sandy clay loam. It contains pockets of sandy clay, loamy sand, or sand in some pedons in the lower part.

Red Bay series

The Red Bay series is a member of the fine-loamy, siliceous, thermic family of Rhodic Paleudults. It consists of nearly level to sloping, well drained, moderately permeable upland soils that formed in coarse and medium textured marine sediments. These soils occur mostly in the north-central and northwestern parts of the county, generally as moderately large areas. The landscape is dissected by moderately well defined drainage patterns. Slopes range from 1 to 8 percent. The water table is below depths of 72 inches.

Red Bay soils are associated with Chipola, Dothan, Esto, Faceville, Greenville, and Orangeburg soils. All occur on a similar landscape. Red Bay soils are redder than any of those soils. In addition, they have a thinner A horizon than Chipola soils and less clay in the Bt horizon than Esto, Faceville, or Greenville soils. Dothan soils contain plinthite.

Typical pedon of Red Bay fine sandy loam in a pine plantation of Red Bay fine sandy loam, 0 to 2 percent slopes, approximately 7 miles north of Marianna near Hays Spring Run; NE1/4SW1/4 sec. 29, T. 6 N., R. 10 W.

Ap—0 to 9 inches; dark reddish brown (5YR 3/3) fine sandy loam; moderate medium granular structure; very friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

B21t—9 to 16 inches; dark red (2.5YR 3/6) sandy clay loam; weak medium subangular blocky structure; friable; many fine and few medium roots; sand grains coated and bridged with clay; strongly acid; clear smooth boundary.

B22t—16 to 49 inches; dark red (2.5YR 3/6) sandy clay loam; weak medium subangular blocky structure; friable; thin discontinuous clay films on faces of peds; sand grains coated and bridged with clay; few small ironstone pebbles; strongly acid; clear smooth boundary.

B23t—49 to 76 inches; dark red (10R 3/6) sandy clay loam; weak medium subangular blocky structure; friable; numerous small ironstone pebbles; clay films on pebbles; patchy clay films on faces of peds; strongly acid.

The solum thickness is 76 inches or more. Unless limed, the soil is strongly acid or very strongly acid in all horizons. Ironstone pebbles range from few to numerous throughout the profile.

Thickness of the A horizon is generally 8 to 12 inches but ranges from 5 to 18 inches. The A1 or Ap horizon has hue of 7.5YR, value of 3, and chroma of 2 or hue of 5YR or 2.5YR, value of 3, and chroma of 2 through 4.

The Bt horizon has hue of 10R and 2.5YR, value of 2.5 or 3, and chroma of 6. A few pedons have yellow or brown mottles below a depth of 48 inches. The dominant texture is sandy clay loam, but in a few pedons the upper few inches of the Bt horizon is sandy loam.

Rutlege series

The Rutlege series is a member of the sandy, siliceous, thermic family of Typic Humaquepts. It consists of very poorly drained, rapidly permeable soils that formed in sandy marine deposits. These nearly level soils occur in slightly depressional areas and on creek flood plains. Slopes are smooth, concave, and less than 2 percent. These soils occur in small areas throughout the county but are most common in the southern part. The water table is at or near the surface for 4 to 6 months annually. Areas on creek flood plains are frequently flooded.

Rutlege soils are associated with Albany, Alapaha, Clarendon, Compass, Dorovan, Leefield, Pamlico, Pantego, and Plummer soils. All of the associated soils but Dorovan and Pamlico soils have an argillic horizon. In addition, Albany, Alapaha, Clarendon, Compass, Leefield, and Plummer soils are better drained and do not have an umbric epipedon. Dorovan and Pamlico soils are organic.

Typical pedon of Rutlege loamy sand in woodland about 1/2 mile east of Florida Highway 167; SE1/4NE1/4 sec. 10, T. 2 N., R. 11 W.

A11—0 to 11 inches; black (10YR 2/1) loamy sand; moderate medium granular structure; very friable; many fine roots; very strongly acid; gradual wavy boundary.

A12—11 to 23 inches; very dark gray (10YR 3/1) loamy sand; common medium distinct gray (10YR 6/1) mottles; weak medium granular structure; very friable; few fine roots; very strongly acid; clear wavy boundary.

Cg—23 to 80 inches; light gray (10YR 7/1) sand; single grained; loose; very strongly acid.

Depth to the Cg horizon is 10 to 24 inches. Reaction is extremely acid or very strongly acid throughout.

The A horizon has hue of 10YR, 2.5Y, or N; value of 2 or 3; and chroma of 2 or less. In many pedons, few to common mottles having higher color value are in the lower part of the A horizon.

The Cg horizon has hue of 10YR, 2.5Y, or N; value of 4 to 6; and chroma of 2 or less if mottled or chroma of 1 or less if not. Texture is sand or loamy sand.

Tifton series

The Tifton series is a member of the fine-loamy, siliceous, thermic family of Plinthic Paleudults. It consists of well drained, moderately permeable, gently sloping or sloping soils on uplands. The landscape is dissected by well defined drainage patterns. Slope ranges from 2 to 8 percent. These soils formed in the loamy materials common to the Coastal Plain. They occur in all but the extreme southwestern part of the county. Mapped areas are generally small. The water table is below a depth of 72 inches.

Tifton soils are associated with Clarendon, Dothan, Fuquay, Orangeburg, and Compass soils. Tifton soils are better drained than Clarendon and Compass soils. Tifton soils are 5 percent or more ironstone nodules, whereas the associated soils are less than 5 percent ironstone nodules. In addition, Orangeburg soils are redder and contain no plinthite, and Fuquay and Compass soils have an A horizon 20 to 40 inches thick.

Typical pedon of Tifton loamy sand in a bahiagrass pasture of Tifton loamy sand, 2 to 5 percent slopes, approximately 2 1/2 miles southwest of Marianna, 1/4 mile south of Florida Highway 276; SW1/4SW1/4 sec. 8, T. 4 N., R. 10 W.

Apcn—0 to 12 inches; dark grayish brown (10YR 4/2) loamy sand; moderate medium granular structure; very friable; many fine roots; common small ironstone nodules; medium acid; abrupt smooth boundary.

A2cn—12 to 17 inches; light yellowish brown (10YR 6/4) loamy sand with few medium faint brown (10YR 5/3) mottles; moderate medium granular structure; very friable; common fine roots; common small ironstone nodules; medium acid; clear wavy boundary.

B1tcn—17 to 20 inches; brownish yellow (10YR 6/6) fine sandy loam; weak medium subangular blocky and moderate medium granular structure; very friable; common fine roots; common ironstone nodules; thin discontinuous clay films on vertical faces of peds; strongly acid; gradual wavy boundary.

B21t—20 to 31 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; common iron concretions; thin discontinuous degraded clay films on vertical ped faces; medium acid; gradual wavy boundary.

B22t—31 to 38 inches; yellowish brown (10YR 5/6) sandy clay with few medium distinct pale brown (10YR 6/3), strong brown (7.5YR 5/6), and yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; thin continuous and discontinuous clay films on vertical faces of peds; strongly acid; clear wavy boundary.

B23t—38 to 55 inches; yellowish brown (10YR 5/6) sandy clay with few medium distinct light gray (10YR 7/2) mottles, few medium prominent red (2.5YR 4/6) mottles, and common medium distinct very pale brown (10YR 7/4) and strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; about 6 percent plinthite; thin continuous clay films on faces of peds; strongly acid; gradual wavy boundary.

B24t—55 to 68 inches; yellowish brown (10YR 5/6) sandy clay loam with common coarse prominent yellowish red (5YR 4/8) mottles, common medium prominent dark red (2.5YR 3/6) mottles, and common coarse distinct light gray (10YR 7/1) and strong brown (7.5YR 5/6) mottles; weak medium

subangular blocky structure; friable; thin discontinuous clay films on faces of peds; slightly compacted; estimated 10 to 20 percent plinthite; strongly acid.

The solum thickness is 60 inches or more. Unless limed, the soil is strongly acid or very strongly acid in all horizons. Ironstone nodules, which occur throughout the profile, make up about 5 to 25 percent of the A horizon and the upper part of the Bt horizons.

Thickness of the A horizon ranges from 4 to 18 inches but is generally 7 to 17 inches. The A1cn or Apcn horizon has hue of 10YR, value of 3 through 5, and chroma of 2 through 4. The A2cn horizon as described does not occur in all pedons.

The B21t and B22t horizons have hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. The B23t and B24t horizons have hue of 10YR, value of 5, and chroma of 6 or 8 or hue of 7.5YR, value of 5, and chroma of 6 or 8 with gray mottles. In many pedons the B24t horizon is reticulately mottled with red, yellow, brown, and gray. Texture of the B1cn horizon ranges from sandy loam to sandy clay loam. The B21t horizon is sandy clay loam. The B22t, B23t, and B24t horizons are sandy clay loam or sandy clay. The profile is more than 5 percent plinthite between depths of 26 and 60 inches.

Troup series

The Troup series is a member of the loamy, siliceous, thermic family of Grossarenic Paleudults. It consists of deep, well drained, moderately permeable soils on uplands that are dissected by well defined drainage patterns. These soils formed in thick deposits of sandy and loamy marine sediments. They occur as medium to large areas throughout the county. Slopes range from 0 to 12 percent. The water table is below a depth of 72 inches.

Troup soils are associated with Blanton, Bonifay, Chipola, Esto, Fuquay, Lakeland, Orangeburg, and Wicksburg soils. Troup soils differ from Blanton soils in having a redder Bt horizon and in being well drained. Bonifay soils are more than 5 percent plinthite and are yellower in the Bt horizon. Chipola, Fuquay, and Wicksburg soils have a Bt horizon at a depth of 20 to 40 inches. Esto and Orangeburg soils have a Bt horizon within a depth of 20 inches. Lakeland soils are sandy to 80 inches or more.

Typical pedon of Troup sand in an idle field of Troup sand, 0 to 5 percent slopes, approximately 4 miles north of the Jackson-Calhoun County line on Florida Highway 167; SE1/4NW1/4 sec. 3, T. 2 N., R. 11 W.

Ap—0 to 5 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; medium acid; clear wavy boundary.

A21—5 to 25 inches; brownish yellow (10YR 6/6) sand; single grained; loose; few uncoated sand grains; medium acid; clear wavy boundary.

A22—25 to 47 inches; pale brown (10YR 6/3) sand; single grained; loose; many uncoated sand grains; few thin 1/4 inch wide strong brown (7.5YR 5/8) loamy sand lamellae; strongly acid; gradual irregular boundary.

A23—47 to 57 inches; reddish yellow (7.5YR 6/6) sand; single grained; loose; many uncoated sand grains; splotches of very pale brown (10YR 7/4); strongly acid; gradual irregular boundary.

B2t—57 to 75 inches; yellowish red (5YR 5/8) sandy loam; few medium distinct red (2.5YR 4/8) and yellowish brown (10YR 5/8) mottles; moderate medium granular structure; friable; few 1/4 to 1/2 inch quartz and ironstone pebbles; sand grains coated and bridged with clay; strongly acid.

The solum thickness is 60 to 80 inches or more. Unless limed, the soil is strongly acid or very strongly acid in all horizons.

Thickness of the A horizon ranges from 40 to 80 inches but commonly is 45 to 65 inches. The Ap, A21, and A22 horizons have hue of 10YR, value of 5 or 6, and chroma of 3 or 4; hue of 7.5YR, value of 5 or 6, and chroma of 6 or 8; or hue of 5YR, value of 4, and chroma of 6 or 8. The A1 horizon has hue of 10YR, value of 3 or 4, and chroma of 2. The A23 horizon has color of 7.5YR 6/6, 5YR 5/6, or 2.5YR 5/8.

The B2t horizon has hue of 10YR, 2.5YR, or 5YR; value of 4 or 5; and chroma of 6 or 8; hue of 7.5YR, value of 5 or 6, and chroma of 6 or 8; or hue of 10YR, value of 5, and chroma of 6 or 8. This horizon is mottled in shades of red and brown in many pedons. It is sandy loam or sandy clay loam.

Wicksburg series

The Wicksburg series is a member of the clayey, kaolinitic, thermic family of Arenic Paleudults. It consists of gently sloping, well drained, deep, slowly permeable soils on uplands. These soils occur as small areas throughout the county but are dominantly in the northern half. They formed in sandy and clayey materials. Slopes range from 2 to 5 percent. The water table is below a depth of 72 inches.

Wicksburg soils are associated with Bonifay, Blanton, Chipola, Dothan, Esto, Faceville, Fuquay, Orangeburg, Tifton, and Troup soils. Bonifay, Blanton, and Troup soils have an A horizon 40 to 80 inches thick and a loamy argillic horizon. Chipola and Fuquay soils have a loamy argillic horizon. Dothan, Esto, Faceville, Orangeburg, and Tifton soils have an A horizon less than 20 inches thick. In addition, Dothan, Orangeburg, and Tifton soils have a fine-loamy argillic horizon.

Typical pedon of Wicksburg loamy sand in an idle field of Wicksburg-Esto complex, 2 to 5 percent slopes, north of Union Grove school, approximately 2 miles northeast of Greenwood, 1 mile east of Florida Highway 71 and

1/4 mile north of Florida Highway 165; SE1/4NE1/4 sec. 29, T. 6 N., R. 9 W.

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy sand; weak medium granular structure; very friable; common fine roots; strongly acid; clear wavy boundary.

A2—8 to 26 inches; light yellowish brown (10YR 6/4) loamy sand; weak medium granular structure; very friable; common fine roots; strongly acid; clear wavy boundary.

B21t—26 to 32 inches; yellowish brown (10YR 5/4) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few clay films on faces of peds; strongly acid; gradual wavy boundary.

B22t—32 to 65 inches; reddish yellow (7.5YR 6/6) sandy clay; common medium distinct light yellowish brown (10YR 6/4), light gray (10YR 7/2), yellowish brown (10YR 5/6), and yellowish red (5YR 5/8) mottles; moderate fine and medium angular and subangular blocky structure; very firm; clay films on faces of peds; strongly acid.

Solum thickness is more than 60 inches. Unless limed, the soil is strongly acid or very strongly acid.

The Ap or A1 horizon has hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 2 or hue of 10YR, value of 4, and chroma of 1. The A2 horizon has hue of 10YR or 2.5Y, value of 5 through 7, and chroma of 3 through 6.

The B21t horizon has hue of 10YR, value of 5 and 6, and chroma of 4 through 8. Texture is sandy clay loam or clay loam. The B22t horizon has hue of 10YR or 7.5YR, value of 5 through 7, and chroma of 6 or 8 and has few to common mottles in shades of red, gray, and yellow. Texture of the B22t horizon is dominantly sandy clay but ranges from clay loam to clay. Some pedons have plinthite within 72 inches of the surface, but the content is less than 5 percent by volume.

Yonges series

The Yonges series is a member of the fine-loamy, mixed, thermic family of Typic Ochraqualfs. It consists of nearly level, poorly drained, moderately slowly permeable soils that formed in loamy sediments. These soils occur on low ridges along the Chipola River flood plains and along large creeks and streams that flow into the Chipola River. The water table is within a depth of 10 inches for about 2 months and between 10 and 20 inches for 4 to 6 months in most years. These soils are subject to occasional flooding. Slopes are 0 to 2 percent.

Yonges soils are associated with Alapaha, Albany, Bibb, Compass, Dothan, Duplin, Herod, Hornsville, Faceville, Grady, Greenville, Orangeburg, and Red Bay soils. Yonges soils have high base saturation, whereas all the associated soils but Herod have low base saturation. In addition, Alapaha, Albany, and Compass soils have an A horizon more than 20 inches thick. Bibb soils are in a coarse-loamy family and have siliceous mineralogy. Dothan, Duplin, Hornsville, Faceville, Greenville, Orangeburg, and Red Bay soils are upland soils and are well drained to moderately well drained, whereas Yonges soils are poorly drained and are on the flood plains. Grady soils are in a clayey kaolinitic family. Herod soils are similar to Yonges soils in drainage and base saturation but have no argillic horizon.

Typical pedon of Yonges fine sandy loam in a wooded area of Yonges-Herod association, 5.5 miles north of Marianna, about 0.25 mile east of Bumpnose Road; NW1/4SW1/4 sec. 8, T. 5 N., R. 10 W.

A1—0 to 4 inches; dark grayish brown (10YR 4/2) fine sandy loam; moderate medium granular structure; very friable; many fine roots; few fragments of charcoal; slightly acid; clear smooth boundary.

A2—4 to 8 inches; light brownish gray (10YR 6/2) fine sandy loam; few streaks of dark grayish brown (10YR 4/2); weak medium subangular blocky structure; very friable; many fine and few medium roots; few fine black manganese concretions; slightly acid; clear smooth boundary.

B21tg—8 to 11 inches; light brownish gray (10YR 6/2) sandy clay loam; common fine faint yellowish brown (10YR 5/4) mottles; moderate fine subangular blocky and some weak fine angular blocky structure; firm; few fine manganese concretions; slightly acid; clear wavy boundary.

B22tg—11 to 19 inches; light brownish gray (10YR 6/2) sandy clay loam with few fine faint very pale brown (10YR 7/4) and common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium angular blocky structure; firm; weak thin patchy clay films on faces of peds; common fine manganese concretions; slightly acid; clear wavy boundary.

B23tg—19 to 34 inches; gray (10YR 6/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6) and yellow (10YR 7/6) mottles; strong medium angular blocky structure; very firm; thick clay films on faces of peds; common small manganese concretions; neutral; clear wavy boundary.

B24tg—34 to 62 inches; light gray (10YR 7/1) clay loam; common coarse distinct yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) mottles; strong fine and medium angular blocky structure; very firm; thick clay films on faces of peds; many siliceous pebbles 1/2 to 2 1/2 inches in diameter coated with yellowish brown; few pockets and streaks of loamy sand; mildly alkaline; gradual wavy boundary.

B3g—62 to 72 inches; light gray (10YR 7/1) sandy clay loam; common coarse distinct brownish yellow (10YR 6/6) and yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm

to friable; many sand pockets and streaks of loamy sand; mildly alkaline; gradual wavy boundary.

Cg—72 to 84 inches; light gray (10YR 7/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/6) and yellow (10YR 7/6) mottles; massive; many pockets of sand and loamy sand; moderately alkaline.

Solum thickness ranges from 40 to 72 inches or more. The soil is strongly acid to neutral in the A horizon and medium acid to mildly alkaline in the Btg horizon.

The A1 horizon has hue of 10YR or 2.5Y, value of 2 through 4, and chroma of 2 or less. The A2 horizon has hue of 10YR, value of 4 through 6, and chroma of 2 or less.

The Btg horizon has hue of 10YR or 2.5Y, value of 4 through 7, and chroma of 2 or less and has mottles in shades of yellow, brown, and red. Texture is sandy clay loam in the upper part and sandy clay loam to clay in the lower part. Calcareous concretions and iron and manganese concretions range from none to common in the lower part of the Btg horizon.

The B3g and Cg horizons have colors similar to those of the Btg horizon. Texture ranges from sandy clay loam to sandy loam with pockets and lenses of sand or loamy sand.

Formation of the soils

In this section the factors of soil formation are discussed and related to the soils in the survey area. In addition, the processes of soil formation are described.

Factors of soil formation

Soil is produced by forces of weathering and soil formation acting on the parent material that has been deposited or accumulated by geologic agencies. The kind of soil that forms depends on five major factors. These factors are the type of parent material, the climate under which soil material has existed since accumulation, the plant and animal life in and on the soil, the relief, or lay of the land, and the length of time the forces of soil formation have acted on the soil material.

The five soil-forming factors are interdependent; each modifies the effect of the others. Any one of the five factors can have more influence than the others on the formation of a soil and can account for most of its properties. For example, if the parent material is quartz sand, the soil generally has only weakly expressed horizons. The effect of the parent material is modified greatly in some places by the effects of climate, relief, and plants and animals in and on the soil. As a soil forms, it is influenced by more than one of the five factors, but in some places all but one factor may have little effect. A modification or variation in any one of the factors results in a formation of a different soil.

Parent material

The parent material of the soils in Jackson County consists of beds of sandy and clayey materials that were transported by floodwaters of major streams and by waters of the sea, which covered the area of a number of times during the Pleistocene. During the high stands of the sea, the Mio-Pliocene sediments were eroded and redeposited or were reworked on the shallow sea bottom to form marine terraces. In addition, flood plain sediments from higher lying uplands were deposited on the marine terraces and in the sea itself to form landmass, or they were reworked and mixed with the marine terrace sediments.

From the surface downward, nearly all of the county is underlain first by the Tampa Formation, then by the Suwannee Limestone Formation, and then by the Marianna Limestone Formation. The depth of the soil mantle over the limestone varies from nothing, where limestone crops out at the surface in and around Marianna, to more than 200 feet in the southwestern part of the county. The Tampa Formation overlies the Suwannee Limestone Formation from the southern county line to about midway between the center of the county and the northern county line. The northern part of the county has a soil mantle overlying the Crystal River Formation. Quarries around Marianna have clear exposures of the Marianna Limestone and the Suwannee Limestone.

The parent materials in the survey area differ widely in mineral and chemical composition and in their physical constitution. The main physical differences, for example the differences between sand, silt, and clay, can be observed in the field. Other differences, such as mineralogical and chemical composition, are important in soil formation and affect present physical and chemical characteristics of the soils. Many differences among soils in the survey area appear to be the result of the differences among the original parent materials.

Climate

The amount of precipitation, the temperature, the humidity, and the wind are the climatic forces that act on parent material of soils. These forces also cause some variation in the plant and animal life on and in the soils. In this way they influence changes in the parent material that result in soil development.

Jackson County has a warm humid climate. The Gulf of Mexico, together with numerous inland lakes, has a moderating effect on both summer and winter temperature. Summer temperatures are fairly uniform from year to year and show little day to day variation. Winter temperatures, however, vary considerably from day to day. Rainfall averages about 55 inches a year.

Because of the warm climate and abundant rainfall, chemical and biological actions are rapid. The abundant rain leaches the soils of many plant nutrients.

Plants and animals

Plants have been the principal biological factor in the formation of soils in this survey area. Animals, insects, bacteria, and fungi also have been important in the chief functions of the plant and animal life or in furnishing organic matter and bringing plant nutrients from the lower to the upper horizons. Differences among soils in amount of organic matter, nitrogen, and plant nutrients and in soil structure and porosity are among those caused by plants and animals.

Relief

Relief has affected the formation of soils in Jackson County primarily through its influence on soil-water relationships and through its effect on erosion in the northern part of the county. Other factors of soil formation normally associated with relief, such as differences in temperature and plant cover, are of minor importance in the county.

Three predominant general topographic areas—the Marianna River Valley Lowlands, the Delta Plain Highlands, and the Terraced Coastal Lowlands—are in the survey area. There are some differences in soils among these general areas that are directly related to relief, but mixing of soils has occurred because of overlap and the continuing geological processes of soil formation.

The Marianna River Valley Lowlands occurs at the lowest elevations, 60 to 180 feet above sea level, and is the largest physiographic area in Jackson County. The soils in this area were formed through erosion and deposition by a number of streams in a complex and complicated manner. The Delta Plain Highlands occurs south of Dry Creek and north of Compass Lake in the southwestern part of the county. It occupies the highest elevations in the county, 240 to 320 feet above sea level. The soils of this area are probably the most leached soils in the survey area. Because of the high content of quartz sand, these soils are subject to very little weathering. They are not influenced by a ground water table. The Terraced Coastal Lowlands occurs south of the Delta Plain Highlands in the southwestern part of the county. Elevations are 180 to 240 feet above sea level. This area is considered to be a marine terrace formed by changes in sea level.

Time

Time is an important factor in soil formation. The physical and chemical changes brought about by climate, living organisms, and relief are slow. The length of time needed to convert raw geologic materials into soil varies according to the nature of the geologic material and the interaction of the other factors. Some basic minerals from which soils are formed weather fairly rapidly, but others are chemically inert and change little over long periods of time. The translocation of fine particles within the soil to form various horizons is variable under different conditions, but the processes always involve relatively long periods of time.

In Jackson County the dominant geological materials are inactive. The sands are almost pure quartz and are highly resistant to weathering. The finer textured silts and clays are the product of earlier weathering.

Relatively little geological time has elapsed since the material in which the soils in the survey area formed was laid down or emerged from the sea. The loamy and clayey horizons developed in place through processes of clay translocation.

Processes of soil formation

Soil morphology is the processes involved in the formation of the soil horizons, or soil horizon differentiation. In Jackson County, the differentiation of horizons in soils is the result of the accumulation of organic matter, the leaching of carbonates, the reduction and transfer of iron, the accumulation of silicate clay minerals, or more than one of these processes.

Some organic matter has accumulated in the upper layers of most of the soils to form an A1 horizon. The quantity of organic matter is small in some of the soils but large in others.

Leaching of carbonates and salts has occurred in nearly all of the soils. The effect of leaching has been indirect in that the leaching permitted the subsequent translocation of silicate clay materials in some soils. Most of the soils of the survey area are leached to varying degrees.

Reduction and transfer of iron has occurred in most soils in the survey area except the organic soils. In some of the wet soils, iron has been segregated within the deeper horizons to form reddish brown mottles and concretions.

References

(1) American Association of State Highway [and Transportation] Officials. 1970. Standard specifications for highway materials and methods of sampling and testing. Ed. 10, 2 vol., illus.

(2) American Society for Testing and Materials. 1974. Method for classification of soils for engineering purposes. ASTM Stand. D 2487-69. *In* 1974 Annual Book of ASTM Standards, Part 19, 464 pp., illus.

(3) Bouyoucos, G. J. 1962. Hydrometer method improved for making particle size analyses of soils. Agron. J. 54: 464-465.

(4) Moore, Wayne E. 1955. Geology of Jackson County, Florida. State of Florida. State Board of

Conservation, Florida Geological Survey, Geol. Bull. No. 37, 101 pp., illus.
(5) United States Department of Agriculture. 1951. Soil survey manual. U.S. Dep. Agric. Handb. 18, 503 pp., illus. [Supplements replacing pp. 173-188 issued May 1962]
(6) United States Department of Agriculture. 1967. Soil survey laboratory methods and procedures for collecting soil samples. Soil Surv. Invest. Rep. 1, 50 pp., illus.
(7) United States Department of Agriculture. 1975. Soil taxonomy. A basic system of soil classification for making and interpreting soil surveys. Soil Conserv. Serv., U.S. Dep. Agric. Handb. 436, 754 pp., illus.
(8) United States Department of Commerce. 1964. Climatic summary of the United States. Supplement for 1951 through 1960, Florida, Climatography of the United States. No. 86-6, 61 pp., illus.
(9) United States Department of Commerce. 1972. Climate of the United States. Climate of Florida, Climatography of the United States. No. 60-8, 31 pp., illus.

Glossary

Absorption field. The area into which a subsurface system of tile or perforated pipe distributes effluent from a septic tank into natural soil.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single mapping unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	More than 9

Base saturation. The degree to which material having base exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the exchange capacity.

Bedding. A partial method of controlling excess water for the growth of citrus and other crops using regularly spaced shallow ditches and beds.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Broad-base terrace. A ridge-type terrace built to control erosion by diverting runoff along the contour at a nonscouring velocity. The terrace is 10 to 20 inches high and 15 to 30 feet wide and has gently sloping sides, a rounded crown, and a dish-shaped channel along the upper side. It may be nearly level or have a grade toward one or both ends.

Calcareous soil. A soil containing enough calcium carbonate (commonly with magnesium carbonate) to effervesce (fizz) visibly when treated with cold, dilute hydrochloric acid. A soil having measurable amounts of calcium carbonate or magnesium carbonate.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coat, clay skin.

Climax vegetation. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse fragments. Mineral or rock particles up to 3 inches (2 millimeters to 7.5 centimeters) in diameter.

Coarse textured (light textured) soil. Sand or loamy sand.

Complex, soil. A map unit of two or more kinds of soil occurring in such an intricate pattern that they cannot be shown separately on a soil map at the selected scale of mapping and publication.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping (or contour farming). Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is 40 or 80 inches (1 or 2 meters).

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cutbanks cave. Unstable walls of cuts made by earthmoving equipment. The soil sloughs easily.

Deep to water. Deep to permanent water table during dry season.

Depth to rock. Bedrock at a depth that adversely affects the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically for long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients, as for example in "hillpeats" and "climatic moors."

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material

through eluviation are eluvial; those that have received material are illuvial.

Erosion. The wearing away of the land surface by running water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes a bare surface.

Excess humus. Too much organic matter for intended use.

Excessive permeability. The rapid movement of water through the soil at rates adversely affecting the specified use.

Excess fines. Excess silt and clay. The soil does not provide a source of gravel or sand for construction purposes.

Fast intake. The rapid movement of water into the soil.

Favorable. Favorable soil features for the specified use.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Fill. Raise the surface level of the land to the desired level with suitable soil material.

Fine textured (heavy textured) soil. Sandy clay, silty clay, and clay.

Flatwoods. Broad, nearly level, low ridges of poorly drained dominantly sandy soils with a characteristic vegetation of open forest of pines and a ground cover of sawpalmetto and pineland threeawn.

Flooding. The temporary covering of soil with water from overflowing streams, runoff from adjacent slopes, and tides. Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *occasional* that it occurs on an average of once or less in 2 years; and *frequent* that it occurs on an average of more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; *November-May*, for example, means that flooding can occur during the period November through May. Water standing for short periods after rainfall or commonly covering swamps and marshes is not considered flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. A soil having one or more neutral gray horizons as a result of waterlogging and lack of oxygen. The term "gleyed" also designates gray horizons and horizons having yellow and gray mottles as a result of intermittent waterlogging.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock up to 3 inches (2 millimeters to 7.5 centimeters) in diameter. An individual piece is a pebble.

Green manure (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table, which is the upper limit of saturation.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. The major horizons of mineral soil are as follows:

O horizon.—An organic layer, fresh and decaying plant residue, at the surface of a mineral soil.

A horizon.—The mineral horizon, formed or forming at or near the surface, in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon most of which was originally part of a B horizon.

A2 horizon.—A mineral horizon, mainly a residual concentration of sand and silt high in content of resistant minerals as a result of the loss of silicate clay, iron, aluminum, or a combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or a

combination of these; (2) by prismatic or blocky structure; (3) by redder or browner colors than those in the A horizon; or (4) by a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that from which the solum is presumed to have formed. If the material is known to differ from that in the solum the Roman numeral II precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered, but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Land shaping. Rearrangement of soil materials by cutting and filling to form a more suitable site for the intended use.

Leaching. The removal of soluble material from soil or other material by percolating water.

Light textured soil. Sand and loamy sand.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy. Intermediate in texture and properties between fine-textured and coarse-textured soils. Includes all textural classes with words loamy or loam as part of the class name such as loamy sand or sandy clay loam. This term is also used as a particle size class in family differentiae for mineral soils.

Low strength. The soil has inadequate strength to support loads.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is greater than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous areas. Areas that have little or no natural soil, are too nearly inaccessible for orderly examination, or cannot otherwise be feasibly classified.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mounding. Filling the area for the absorption field with suitable soil material to the level above the water table necessary to meet local and State requirements.

Muck. Dark colored, finely divided, well decomposed organic soil material mixed with mineral soil material. The content of organic matter is more than 20 percent.

Munsell notation. A designation of color by degrees of the three single variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3.

No water. Too deep to ground water.

Nutrient, plant. Any element taken in by a plant, essential to its growth, and used by it in the production of food and tissue. Plant nutrients are nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, zinc, and perhaps other elements obtained from the soil; and carbon, hydrogen, and oxygen obtained largely from the air and water.

Parent material. The great variety of unconsolidated organic and mineral material in which soil forms. Consolidated bedrock is not yet parent material by this concept.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs rapidly. See Excessive permeability.

Percs slowly. The slow movement of water through the soil adversely affecting the specified use.

Permeability. The quality that enables the soil to transmit water or air, measured as the number of inches per hour that water moves through the soil. Terms describing permeability are *very slow* (less than 0.06 inch), *slow* (0.06 to 0.20 inch), *moderately slow* (0.2 to 0.6 inch), *moderate* (0.6 to 2.0 inches), *moderately rapid* (2.0 to 6.0 inches), *rapid* (6.0 to 20 inches), and *very rapid* (more than 20 inches).

Phase, soil. A subdivision of a soil series or other unit in the soil classification system based on differences in the soil that affect its management. A soil series, for example, may be divided into phases on the bases of differences in slope, stoniness, thickness, or some other characteristic that affects management. These differences are too small to justify separate series.

pH value. (See Reaction, soil). A numerical designation of acidity and alkalinity in soil.

Piping. Moving water of subsurface tunnels or pipelike cavities in the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from a semisolid to a plastic state.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents that commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on exposure to repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade, whereas ironstone cannot be cut but can be broken or shattered with a spade. Plinthite is one form of the material that has been called laterite.

Ponded. Shallow water standing above the soil surface for long (usually more than 3 months) periods of time.

Poorly graded. Refers to soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets. Surface or subsurface drainage outlets difficult or expensive to install.

Productivity (soil). The capability of a soil for producing a specified plant or sequence of plants under a specified system of management. Productivity is measured in terms of output, or harvest, in relation to input.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Rooting depth. Shallow root zone. The soil is shallow over a layer that greatly restricts roots. See Root zone.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged in stream channels from a drainage area. The water that flows off the land surface without sinking in is called surface runoff; that which enters the ground before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Seal or line. Seal or line the bottom and sides of excavations and trenches to prevent the downward and lateral movement of water.

Seepage. The rapid movement of water through the soil. Seepage adversely affects the specified use.

Series, soil. A group of soils, formed from a particular type of parent material, having horizons that, except for the texture of the A or surface horizon, are similar in all profile characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineralogical and chemical composition.

Shear strength. A laboratory determination which is used in conjunction with other laboratory data to evaluate the load supporting capability of a soil.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and runoff water.

Shore side walls. Construct walls along sides of excavated trenches to prevent soil from caving.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Sinkhole. A depression in a landscape where limestone has been locally dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slough. A broad, usually grassy, slightly depressed, poorly defined drainageway.

Slow intake. The slow movement of water into the soil.

Slow refill. The slow filling of ponds, resulting from restricted permeability in the soil.

Soil. A natural, three-dimensional body at the earth's surface that is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil blowing. Soil easily moved and deposited by wind.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes of separates recognized in the United States are as follows: *very coarse sand* (2.0 millimeters to 1.0 millimeter); *coarse sand* (1.0 to 0.5 millimeter); *medium sand* (0.5 to 0.25 millimeter); *fine sand* (0.25 to 0.10 millimeter); *very fine sand* (0.10 to 0.05 millimeter); *silt* (0.005 to 0.002 millimeter); and *clay* (less than 0.002 millimeter).

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in mature soil consists of the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristics of the soil are largely confined to the solum.

Special equipment. Equipment needed that can traverse soft and wet soils of low strength.

Stripcropping. Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates that are separated from adjoining aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsidence. Usually an organic or soil containing semifluid layers which sinks to a lower level after lowering of the water table.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface stabilization. Stabilize the surface by an appropriate means so that vehicles or foot traffic can traverse an area.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that it can soak into the soil or flow slowly to a prepared outlet without harm. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea. A stream terrace is frequently called a second bottom, in contrast with a flood plain, and is seldom subject to overflow. A marine terrace, generally wide, was deposited by the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt, silt loam, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or " very fine."

Thin layer. Otherwise suitable soil material too thin for the specified use.

Tilth, soil. The condition of the soil, especially the soil structure, as related to the growth of plants. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Too clayey. Soil slippery and sticky when wet and slow to dry.

Too sandy. Soil soft and loose; droughty and low in fertility.

Topsoil (engineering). Presumably a fertile soil or soil material, or one that responds to fertilization, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

Unit, map. A unique natural landscape that has a distinct pattern of soils and drainage features. Map unit areas are shown on the General Soil Map.

Unstable fill. Risk of caving or sloughing in banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Variant, soil. A soil having properties sufficiently different from those of other known soils to justify a new series name, but the limited geographic soil area does not justify creation of a new series.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water control. Regulate the water table according to the need of the intended use by canals, ditches, tile, pumping, or any other appropriate method.

Water table. The upper limit of the soil or underlying rock material that is wholly saturated with water.

Water table, apparent. —A thick zone of free water in the soil. An apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

Water table perched. —A water table standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to a soil or soil material consisting of particles well distributed over a wide range in size or diameter. Such a soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wetness. Soil wet during period of use.

ILLUSTRATIONS

Figure 1.—Florida Caverns State Park near Marianna. This park, dominantly on Red Bay, Orangeburg, and Greenville soils, provides picnicking, swimming, camping, and golf facilities.

Figure 2.—Flooded highways. All roads on flood plains along rivers and larger creeks in Jackson County are subject to flooding. This road is on Bibb soils.

Figure 3.—Peanuts on Chipola loamy sand, 0 to 5 percent slopes. Irrigation is often needed to insure maximum yields.

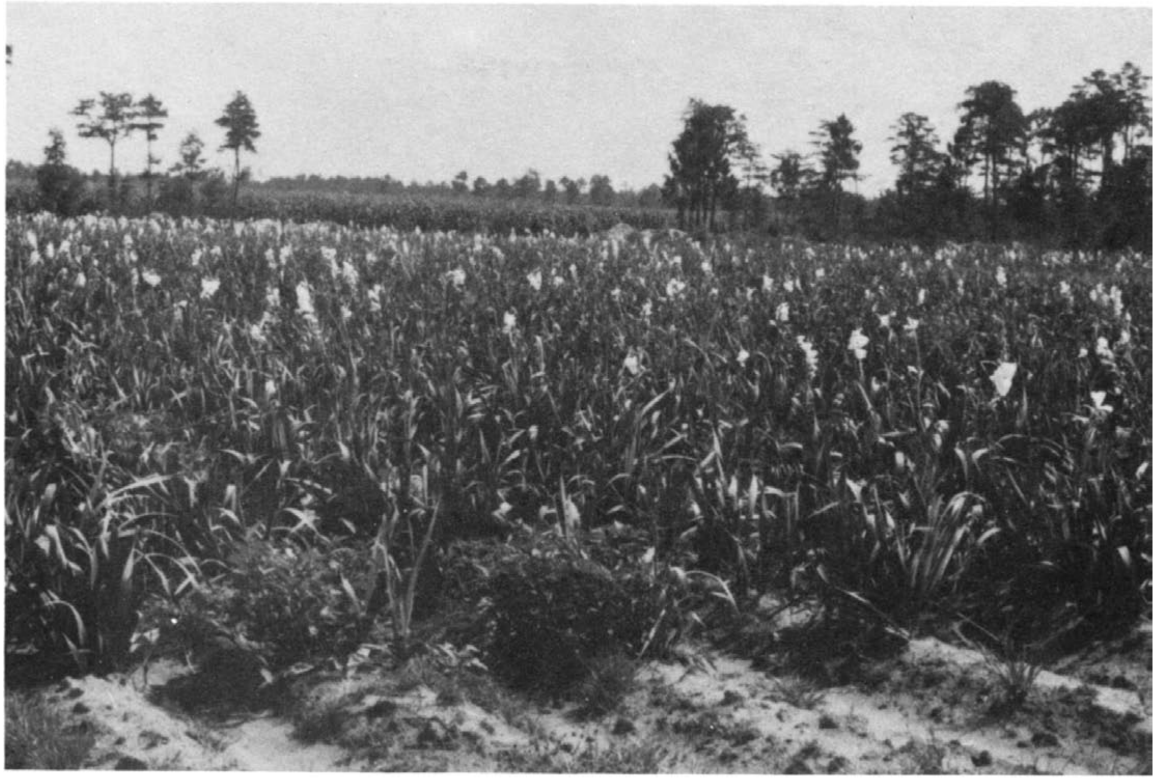


Figure 4.—Gladiolus on Dothan loamy sand, 2 to 5 percent slopes.

Figure 5.—Excellent pasture of bahiagrass on Chipola loamy sand, 0 to 5 percent slopes.

Figure 6.—Improved bermudagrass on Troup sand, 0 to 5 percent slopes. Hay yields are high if management is good.

Figure 7.—Golf fairway on Orangeburg loamy sand, 2 to 5 percent slopes in Florida Caverns State Park.

Figure 8.—Faceville and Esto soils, 5 to 15 percent slopes, severely eroded, along banks of Blue Springs recreational area.

TABLES

TABLE 1.--TEMPERATURE AND PRECIPITATION DATA

[Data recorded at Chipley, Quincy, and Marianna, Florida]

Month	Temperature					Precipitation				
	Monthly normal mean	Normal daily maximum	Normal daily minimum	Mean number of days with temperature of-- 90°F or higher	Mean number of days with temperature of-- 32°F or lower	Normal total	Maximum total	Minimum total	Mean number of days with rainfall of-- 0.10 inch or more	Mean number of days with rainfall of-- 0.50 inch or more
	°F	°F	°F			In	In	In		
January	54.0	65.1	42.7	0	10	4.78	9.27	0.40	7	2
February	56.3	67.0	44.2	0	8	4.34	11.50	2.43	7	3
March	61.1	72.2	49.0	*	4	5.70	11.49	1.29	5	3
April	67.7	79.0	55.9	2	0	5.02	7.14	1.06	5	3
May	74.7	86.4	63.3	10	0	4.30	8.23	Trace	6	2
June	80.8	90.5	70.0	20	0	4.82	12.62	2.96	6	2
July	81.0	90.5	72.0	21	0	7.67	20.12	4.87	11	4
August	80.8	90.3	71.8	21	0	6.47	10.75	4.88	7	3
September	77.6	87.2	78.1	15	0	4.81	15.92	1.57	8	4
October	69.0	80.6	58.6	2	0	2.08	10.48	Trace	5	2
November	59.2	71.1	47.3	0	5	3.27	7.42	0.88	3	2
December	54.4	65.4	42.8	0	9	5.07	12.65	2.44	5	3
Year	68.0	78.8	57.2	91	37	58.33	20.12	Trace	77	34

* Less than 0.5.

TABLE 2.--FREEZE DATA

[Data recorded at Marianna, Florida]

Freeze threshold temperature	Mean date of last spring occurrence	Mean date of first fall occurrence	Mean number of days between dates	Years of record, spring	Number of occurrences in spring	Years of record, fall	Number of occurrences in fall
32	March 3	November 22	266	29	29	29	29
28	February 9	December 8	310	29	25	29	19
24	January 22	December 21	336	28	19	29	13
20	January 7	December 28	354	28	9	29	5

TABLE 3.--SOIL POTENTIALS AND RESTRICTIVE FEATURES BY MAP UNITS

[See text for definitions of potential ratings. To reach soil potential, restrictive features must be overcome]

Map unit	Percent of county area	Community development	Cultivated farm crops	Improved pasture	Woodland
1. Lakeland-Troup-Blanton	10	Very high	Low: droughty.	Medium: droughty.	Moderately high: droughty.
2. Blanton-Troup-Bonifay	10	Very high	Medium: droughty.	High: droughty.	Moderately high: droughty.
3. Fuquay-Chipola-Troup	16	Very high	High: droughty.	Very high	Moderately high: droughty.
4. Orangeburg-Dothan-Red Bay	21	Very high	Very high	Very high	High: droughty.
5. Greenville-Faceville	4	High: too clayey, low strength, percs slowly.	High: clayey.	Very high	High: droughty.
6. Dothan-Clarendon-Compass	20	High: percs slowly, wetness, slope.	High: wetness.	High: wetness.	High: wetness.
7. Hornsville-Duplin-Bethera	3	Medium: low strength, percs slowly, wetness.	High: wetness.	Very high: wetness.	High: wetness.
8. Clarendon-Compass-Plummer	6	Low: wetness, ponds, percs slowly.	Medium: wetness, ponds.	High: wetness, ponds.	High: wetness, ponds.
9. Grady-Bibb-Pamlico	10	Very low: floods, wetness, percs slowly.	Low: floods, wetness.	Medium: floods, wetness.	High: floods, wetness.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
1	Alapaha loamy sand	5,145	0.9
2	Albany sand, 0 to 5 percent slopes	7,970	1.3
3	Apalachee clay	4,960	0.8
4	Bethera silt loam	3,550	0.6
5	Bibb soils	14,690	2.5
6	Blanton coarse sand, 0 to 5 percent slopes	35,570	6.0
7	Blanton coarse sand, 5 to 8 percent slopes	4,550	0.8
8	Bonifay sand, 0 to 5 percent slopes	13,690	2.3
9	Bonifay sand, 5 to 8 percent slopes	4,390	0.7
10	Chipola loamy sand, 0 to 5 percent slopes	24,170	4.1
11	Chipola loamy sand, 5 to 8 percent slopes	3,260	0.5
12	Clarendon fine sandy loam	20,025	3.4
13	Compass loamy sand, 0 to 2 percent slopes	380	0.1
14	Compass loamy sand, 2 to 5 percent slopes	16,160	2.7
15	Compass loamy sand, 5 to 8 percent slopes	2,070	0.3
16	Dorovan-Pamlico association	8,970	1.5
17	Dothan loamy sand, 2 to 5 percent slopes	80,645	13.5
18	Dothan loamy sand, 5 to 8 percent slopes	9,870	1.7
19	Dothan loamy sand, 8 to 12 percent slopes	350	0.1
20	Duplin fine sandy loam, 0 to 2 percent slopes	2,045	0.3
21	Duplin fine sandy loam, 2 to 5 percent slopes	5,255	0.9
22	Esto loamy sand, 2 to 5 percent slopes	1,310	0.2
23	Esto loamy sand, 5 to 8 percent slopes	1,510	0.3
24	Faceville loamy fine sand, 2 to 5 percent slopes	5,160	0.9
25	Faceville loamy fine sand, 5 to 8 percent slopes	4,100	0.7
26	Faceville loamy fine sand, 8 to 12 percent slopes	900	0.2
27	Faceville-Esto complex, 5 to 15 percent slopes, severely eroded	4,900	0.8
28	Foxworth sand, 0 to 5 percent slopes	1,800	0.3
29	Foxworth sand, 5 to 8 percent slopes	280	*
30	Fuquay coarse sand, 0 to 5 percent slopes	44,515	7.5
31	Fuquay coarse sand, 5 to 8 percent slopes	7,590	1.3
32	Grady fine sandy loam	16,960	2.8
33	Greenville fine sandy loam, 2 to 5 percent slopes	9,410	1.6
34	Greenville fine sandy loam, 5 to 8 percent slopes	2,980	0.5
35	Hornsville fine sandy loam, 0 to 2 percent slopes	1,430	0.2
36	Hornsville fine sandy loam, 2 to 5 percent slopes	5,910	1.0
37	Iuka loam	1,010	0.2
38	Lakeland sand, 0 to 5 percent slopes	15,000	2.5
39	Lakeland sand, 5 to 8 percent slopes	6,000	1.0
40	Lakeland sand, 8 to 12 percent slopes	1,300	0.2
41	Lakeland sand, 12 to 30 percent slopes	150	*
42	Leefield loamy sand	4,350	0.7
43	Oktibbeha Variant-Rock outcrop complex, 2 to 5 percent slopes	600	0.1
44	Oktibbeha Variant-Rock outcrop complex, 5 to 12 percent slopes	2,000	0.3
45	Orangeburg loamy sand, 0 to 2 percent slopes	1,800	0.3
46	Orangeburg loamy sand, 2 to 5 percent slopes	45,910	7.7
47	Orangeburg loamy sand, 5 to 8 percent slopes	6,825	1.1
48	Pamlico-Pantego-Rutlege association	12,530	2.1
49	Pansey fine sandy loam	6,505	1.1
50	Pits	610	0.1
51	Plummer sand	4,075	0.7
52	Plummer sand, depressional	3,910	0.7
53	Red Bay fine sandy loam, 0 to 2 percent slopes	600	0.1
54	Red Bay fine sandy loam, 2 to 5 percent slopes	12,840	2.2
55	Red Bay fine sandy loam, 5 to 8 percent slopes	1,200	0.2
56	Rutlege loamy sand	515	0.1
57	Tifton loamy sand, 2 to 5 percent slopes	9,160	1.5
58	Tifton loamy sand, 5 to 8 percent slopes	2,660	0.4
59	Troup sand, 0 to 5 percent slopes	47,500	8.0
60	Troup sand, 5 to 8 percent slopes	6,695	1.1
61	Troup sand, 8 to 12 percent slopes	880	0.1
62	Urban land	680	0.1
63	Wicksburg-Esto complex, 2 to 5 percent slopes	4,880	0.8
64	Yonges-Herod association	13,400	2.2
	Water	6,625	1.1
	Total	596,680	100.0

* Less than 0.1 percent.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[All yields were estimated for a high level of management. Absence of a yield figure indicates the crop is seldom grown or is not suited]

Soil name and map symbol	Corn	Soybeans	Peanuts	Watermelons	Improved bermuda-grass	Bahiagrass	Grass hay
	Bu	Bu	Lb	Ton	AUM*	AUM*	Ton
1----------------------- Alapaha	---	---	---	---	6.0	5.0	3.0
2----------------------- Albany	75	20	1,700	10	7.0	6.5	4.5
3----------------------- Apalachee	---	---	---	---	---	6.0	3.5
4----------------------- Bethera	105	35	---	---	---	10.0	5.0
5**--------------------- Bibb	---	---	---	---	9.0	8.5	4.5
6----------------------- Blanton	60	25	2,200	12	8.0	6.5	4.0
7----------------------- Blanton	50	20	2,000	10	7.5	6.5	3.5
8----------------------- Bonifay	50	20	1,600	12	7.0	5.0	3.0
9----------------------- Bonifay	45	20	1,400	10	7.0	5.0	3.0
10---------------------- Chipola	80	25	3,000	12	8.5	8.0	5.5
11---------------------- Chipola	70	20	2,500	10	7.5	7.0	5.0
12---------------------- Clarendon	110	40	3,100	14	10.5	10.0	4.5
13---------------------- Compass	80	35	3,100	12	10.0	7.5	4.0
14---------------------- Compass	75	30	3,000	12	10.0	7.5	4.0
15---------------------- Compass	60	25	2,700	10	8.0	7.0	4.0
16**:							
Dorovan-----------------	---	---	---	---	---	13.0	6.0
Pamlico-----------------	---	---	---	---	---	13.0	6.0
17---------------------- Dothan	80	35	2,200	12	8.5	8.0	5.5
18---------------------- Dothan	75	30	1,800	12	8.5	8.0	5.0
19---------------------- Dothan	60	25	1,800	10	7.0	6.0	5.0
20---------------------- Duplin	110	50	3,300	12	10.0	8.0	5.0
21---------------------- Duplin	100	45	3,300	10	10.0	8.0	5.0

See footnotes at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Soybeans	Peanuts	Watermelons	Improved bermuda-grass	Bahiagrass	Grass hay
	Bu	Bu	Lb	Ton	AUM*	AUM*	Ton
22-------- Esto	50	35	1,700	10	6.0	6.0	4.0
23-------- Esto	40	30	1,500	8	5.5	5.5	3.5
24-------- Faceville	105	40	3,800	14	10.0	7.0	6.0
25-------- Faceville	80	30	2,800	12	9.5	6.0	5.0
26-------- Faceville	70	25	2,500	10	7.0	5.0	4.0
27-------- Faceville	---	---	---	---	6.5	5.5	3.5
28-------- Foxworth	45	25	1,600	6	7.5	7.5	3.5
29-------- Foxworth	40	20	1,500	5	7.5	7.5	3.5
30-------- Fuquay	80	30	2,900	12	8.5	7.0	4.0
31-------- Fuquay	75	25	2,600	10	7.5	6.0	3.5
32-------- Grady	65	30	---	---	---	8.0	4.5
33-------- Greenville	95	35	3,000	14	11.0	8.5	6.5
34-------- Greenville	85	25	2,600	12	10.0	7.5	6.0
35-------- Hornsville	100	40	3,300	14	12.0	9.0	7.0
36-------- Hornsville	90	35	3,200	12	11.0	8.5	6.0
37-------- Iuka	90	30	3,000	12	10.0	8.0	5.5
38-------- Lakeland	55	20	2,000	10	7.0	6.5	4.0
39, 40-------- Lakeland	---	---	---	---	6.5	6.5	3.5
41-------- Lakeland	---	---	---	---	6.0	6.0	3.0
42-------- Leefield	85	35	2,200	---	9.0	8.0	5.5
43-------- Oktibbeha variant	55	35	---	---	8.5	7.5	5.0
44-------- Oktibbeha variant	50	30	---	---	8.0	7.0	5.0
45-------- Orangeburg	100	50	4,000	14	10.5	8.5	6.5

See footnotes at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Soybeans	Peanuts	Watermelons	Improved bermuda-grass	Bahiagrass	Grass hay
	Bu	Bu	Lb	Ton	AUM*	AUM*	Ton
46----------------------- Orangeburg	100	45	3,800	12	10.5	8.5	6.5
47----------------------- Orangeburg	90	35	3,200	10	10.0	8.0	6.0
48**:							
Pamlico------------------	115	40	---	---	---	13.0	6.0
Pantego------------------	120	50	---	---	10.0	8.5	5.5
Rutlege------------------	80	30	---	---	10.0	8.5	5.5
49----------------------- Pansey	75	---	---	---	9.0	8.0	5.0
50**. Pits							
51----------------------- Plummer	40	20	---	---	8.5	7.5	4.5
52----------------------- Plummer	---	---	---	---	6.0	5.0	3.0
53----------------------- Red Bay	90	35	3,500	14	10.0	8.5	6.5
54----------------------- Red Bay	90	35	3,200	12	9.5	8.0	6.5
55----------------------- Red Bay	85	30	2,800	10	9.0	7.5	6.0
56----------------------- Rutlege	80	30	---	---	10.0	8.5	5.5
57----------------------- Tifton	100	46	3,500	14	10.5	8.5	6.0
58----------------------- Tifton	85	38	2,800	12	10.0	8.0	6.0
59----------------------- Troup	60	25	2,200	12	7.5	7.0	4.0
60----------------------- Troup	55	22	1,800	10	7.0	6.5	3.5
61----------------------- Troup	---	---	---	---	6.5	6.0	3.0
62**. Urban land							
63----------------------- Wicksburg	56	---	3,080	12	6.5	6.5	4.0
64**:							
Yonges-------------------	110	40	---	---	---	10.0	6.0
Herod--------------------	---	---	---	---	---	10.0	6.0

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for a period of 30 days.
** See mapping unit description for the composition and behavior of the mapping unit.

TABLE 6.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas excluded. Absence of an entry means no acreage]

Class	Total acreage	Major management concerns (subclass)		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
I	2,400	---	---	---
II	291,303	192,495	27,195	71,613
III	154,080	49,127	3,133	101,820
IV	77,588	9,660	43,708	24,220
V	38,195	---	38,195	---
VI	14,875	6,695	---	8,180
VII	4,060	---	3,910	150
VIII	---	---	---	---

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available]

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Potential productivity: Common trees	Potential productivity: Site index	Trees to plant
1 Alapaha	2w	Slight	Moderate	Slight	Slight	Slash pine	90	Slash pine, loblolly pine.
						Loblolly pine	90	
						Longleaf pine	75	
2 Albany	3w	Slight	Moderate	Moderate	Slight	Loblolly pine	80	Loblolly pine, slash pine.
						Slash pine	80	
						Longleaf pine	65	
3 Apalachee	2w	Slight	Severe	Severe	Moderate	Slash pine	90	Slash pine, loblolly pine.
						Loblolly pine	90	
						Sweetgum	90	
						Water oak	90	
						Eastern cottonwood	100	
4 Bethera	2w	Slight	Severe	Severe	Slight	Loblolly pine	90	Loblolly pine, slash pine.
						Slash pine	90	
						Longleaf pine	75	
5* Bibb	2w	Slight	Severe	Severe	Slight	Loblolly pine	90	Eastern cottonwood, loblolly pine, sweetgum, yellow-poplar.
						Sweetgum	90	
						Water oak	90	
6, 7 Blanton	3s	Slight	Moderate	Moderate	Slight	Slash pine	80	Slash pine.
						Loblolly pine	80	
						Longleaf pine	65	
8, 9 Bonifay	3s	Slight	Moderate	Moderate	Slight	Slash pine	80	Slash pine, loblolly pine.
						Longleaf pine	65	
						Loblolly pine	80	
10, 11 Chipola	3s	Slight	Moderate	Moderate	Slight	Slash pine	80	Slash pine, loblolly pine.
						Loblolly pine	80	
						Longleaf pine	70	
12 Clarendon	2w	Slight	Moderate	Slight	Slight	Loblolly pine	90	Loblolly pine, slash pine, American sycamore, yellow-poplar, sweetgum.
						Slash pine	90	
						Sweetgum	85	
13, 14, 15 Compass	2o	Slight	Slight	Slight	Slight	Slash pine	90	Slash pine, loblolly pine.
						Loblolly pine	90	
						Longleaf pine	75	
						Sweetgum	---	
16*:								
Dorovan	5w	Slight	Severe	Severe	Slight	Blackgum	70	Pond pine.
						Sweetbay	---	
Pamlico	5w	Slight	Severe	Severe	Slight	Slash pine	70	Pond pine, slash pine, loblolly pine.
						Pond pine	55	
						Baldcypress	---	
						Water tupelo	---	
17, 18, 19 Dothan	2o	Slight	Slight	Slight	Slight	Slash pine	90	Slash pine, loblolly pine.
						Loblolly pine	90	
						Longleaf pine	70	

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordi-nation symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equip-ment limita-tion	Seedling mortal-ity	Wind-throw hazard	Common trees	Site index	
20, 21------------- Duplin	2w	Slight	Moderate	Moderate	Slight	Loblolly pine------- Slash pine---------- Sweetgum------------ Blackgum------------ Yellow-poplar-------	90 90 90 --- 100	Loblolly pine, slash pine, yellow-poplar, American sycamore, sweetgum.
22, 23------------- Esto	3o	Slight	Slight	Slight	Slight	Loblolly pine------- Longleaf pine------- Slash pine----------	80 65 80	Loblolly pine, slash pine.
24, 25, 26--------- Faceville	3o	Slight	Slight	Slight	Slight	Loblolly pine------- Slash pine---------- Longleaf pine-------	80 80 65	Loblolly pine, slash pine.
27*:								
Faceville---------	3o	Slight	Slight	Slight	Slight	Loblolly pine------- Slash pine---------- Longleaf pine-------	80 80 65	Loblolly pine, slash pine.
Esto--------------	3o	Slight	Slight	Slight	Slight	Loblolly pine------- Longleaf pine------- Slash pine----------	80 65 80	Loblolly pine, slash pine.
28, 29------------- Foxworth	3s	Slight	Moderate	Moderate	Slight	Slash pine---------- Longleaf pine-------	80 65	Slash pine.
30, 31------------- Fuquay	3s	Slight	Moderate	Moderate	Slight	Loblolly pine------- Slash pine---------- Longleaf pine-------	80 80 65	Slash pine, loblolly pine.
32*---------------- Grady	2w	Slight	Severe	Severe	Slight	Loblolly pine------- Slash pine---------- Sweetgum------------	90 88 90	Loblolly pine, slash pine, American sycamore.
33, 34------------- Greenville	3o	Slight	Slight	Slight	Slight	Loblolly pine------- Longleaf pine------- Slash pine----------	80 65 80	Loblolly pine, slash pine.
35, 36------------- Hornsville	2w	Slight	Moderate	Moderate	Slight	Loblolly pine------- Slash pine---------- Sweetgum------------	90 90 90	Loblolly pine, slash pine, sweetgum, yellow-poplar.
37*---------------- Iuka	1w	Slight	Moderate	Moderate	Slight	Slash pine---------- Loblolly pine------- Sweetgum------------ Eastern cottonwood-- Water oak-----------	100 100 100 105 100	Slash pine, loblolly pine, eastern cottonwood, yellow-poplar.
38, 39, 40, 41----- Lakeland	3s	Slight	Moderate	Moderate	Slight	Slash pine---------- Longleaf pine-------	80 70	Slash pine.
42----------------- Leefield	3w	Slight	Moderate	Moderate	Slight	Loblolly pine------- Slash pine---------- Longleaf pine-------	84 84 70	Loblolly pine, slash pine.
43*, 44*----------- Oktibbeha variant	3c	Slight	Moderate	Moderate	Slight	Loblolly pine-------	80	Loblolly pine, slash pine.
45, 46, 47--------- Orangeburg	2o	Slight	Slight	Slight	Slight	Loblolly pine------- Slash pine---------- Longleaf pine-------	86 86 70	Slash pine, loblolly pine.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Potential productivity: Common trees	Potential productivity: Site index	Trees to plant
48*:								
Pamlico	5w	Slight	Severe	Severe	Slight	Slash pine Pond pine Baldcypress Water tupelo	70 55 --- ---	Slash pine, loblolly pine.
Pantego	1w	Slight	Severe	Severe	Slight	Loblolly pine Slash pine Pond pine Baldcypress Water tupelo Water oak	100 100 70 --- --- ---	Loblolly pine, slash pine, sweetgum, American sycamore.
Rutlege	2w	Slight	Severe	Severe	Slight	Loblolly pine Slash pine Sweetgum Water tupelo	90 90 90 ---	Loblolly pine, sweetgum, slash pine, American sycamore.
49 Pansey	3w	Slight	Severe	Severe	Moderate	Slash pine Loblolly pine Sweetgum Water oak	80 80 80 ---	Slash pine, loblolly pine, sweetgum.
51, 52 Plummer	2w	Slight	Severe	Severe	Slight	Slash pine Loblolly pine Longleaf pine	90 90 75	Loblolly pine, slash pine.
53, 54, 55 Red Bay	2o	Slight	Slight	Slight	Slight	Loblolly pine Longleaf pine Slash pine	90 70 90	Loblolly pine, slash pine.
56 Rutlege	2w	Slight	Severe	Severe	Slight	Loblolly pine Slash pine Sweetgum Water tupelo	90 90 90 ---	Loblolly pine, sweetgum, slash pine, American sycamore.
57, 58 Tifton	2o	Slight	Slight	Slight	Slight	Loblolly pine Slash pine Longleaf pine	90 90 75	Loblolly pine, slash pine.
59, 60, 61 Troup	3s	Slight	Moderate	Moderate	Slight	Loblolly pine Longleaf pine Slash pine	80 65 80	Loblolly pine, slash pine.
63*:								
Wicksburg	3s	Slight	Moderate	Moderate	Slight	Loblolly pine Slash pine Longleaf pine	80 80 65	Loblolly pine, slash pine.
Esto	3o	Slight	Slight	Slight	Slight	Loblolly pine Longleaf pine Slash pine	80 65 80	Loblolly pine, slash pine.
64*:								
Yonges	1w	Slight	Severe	Severe	Slight	Loblolly pine Sweetgum Water oak	105 100 100	Loblolly pine, slash pine, sweetgum, American sycamore.
Herod	1w	Slight	Severe	Severe	Slight	Loblolly pine Sweetgum Water oak Eastern cottonwood	100 100 90 100	Loblolly pine, slash pine, sweetgum, eastern cottonwood.

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 8.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
1----------------- Alapaha	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
2----------------- Albany	Severe: wetness, cutbanks cave.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.
3----------------- Apalachee	Severe: too clayey, floods, wetness.	Severe: floods, wetness, shrink-swell.	Severe: floods, wetness, shrink-swell.	Severe: floods, wetness, shrink-swell.	Severe: low strength, wetness, floods.
4----------------- Bethera	Severe: floods, too clayey, wetness.	Severe: floods, low strength, wetness.	Severe: floods, low strength, wetness.	Severe: floods, low strength, wetness.	Severe: floods, low strength, wetness.
5*---------------- Bibb	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
6----------------- Blanton	Severe: cutbanks cave.	Slight-----------	Slight-----------	Slight------------	Slight.
7----------------- Blanton	Severe: cutbanks cave.	Slight-----------	Slight-----------	Moderate: slope.	Slight.
8----------------- Bonifay	Severe: cutbanks cave.	Slight-----------	Slight-----------	Slight------------	Slight.
9----------------- Bonifay	Severe: cutbanks cave.	Slight-----------	Slight-----------	Moderate: slope.	Slight.
10---------------- Chipola	Severe: cutbanks cave.	Slight-----------	Slight-----------	Slight------------	Slight.
11---------------- Chipola	Severe: cutbanks cave.	Slight-----------	Slight-----------	Moderate: slope.	Slight.
12---------------- Clarendon	Moderate: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, corrosive.	Slight.
13, 14------------ Compass	Moderate: wetness.	Slight-----------	Moderate: shrink-swell, wetness.	Slight------------	Slight.
15---------------- Compass	Moderate: wetness.	Slight-----------	Moderate: shrink-swell, wetness.	Moderate: slope.	Slight.
16*:					
Dorovan----------	Severe: wetness, floods, excess humus.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.
Pamlico----------	Severe: floods, wetness.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.

See footnote at end of table.

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
17----------------- Dothan	Moderate: wetness.	Slight-----------	Moderate: wetness.	Slight------------	Slight.
18----------------- Dothan	Moderate: wetness.	Slight-----------	Moderate: wetness.	Moderate: slope.	Slight.
19----------------- Dothan	Moderate: wetness.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.
20, 21------------ Duplin	Moderate: too clayey, wetness.	Moderate: low strength, shrink-swell.	Severe: wetness, shrink-swell, low strength.	Moderate: wetness, shrink-swell, low strength.	Severe: low strength.
22, 23------------ Esto	Moderate: too clayey.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.	Severe: low strength.
24----------------- Faceville	Moderate: too clayey.	Slight-----------	Slight-----------	Slight------------	Moderate: low strength.
25----------------- Faceville	Moderate: too clayey.	Slight-----------	Slight-----------	Moderate: slope.	Moderate: low strength.
26----------------- Faceville	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.
27*:					
Faceville---------	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.
Esto--------------	Moderate: too clayey.	Moderate: low strength.	Moderate: low strength.	Severe: slope.	Severe: low strength.
28----------------- Foxworth	Severe: cutbanks cave.	Slight-----------	Moderate: wetness.	Slight------------	Slight.
29----------------- Foxworth	Severe: cutbanks cave.	Slight-----------	Moderate: wetness.	Moderate: slope.	Slight.
30----------------- Fuquay	Slight-----------	Slight-----------	Slight-----------	Slight------------	Slight.
31----------------- Fuquay	Slight-----------	Slight-----------	Slight-----------	Moderate: slope.	Slight.
32*---------------- Grady	Severe: ponds, wetness.	Severe: ponds, wetness.	Severe: ponds, wetness.	Severe: ponds, wetness.	Severe: ponds, wetness.
33----------------- Greenville	Moderate: too clayey.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.
34----------------- Greenville	Moderate: too clayey.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength, slope.	Moderate: low strength.
35, 36------------ Hornsville	Moderate: too clayey.	Severe: low strength.	Severe: low strength.	Severe: low strength.	Severe: low strength.
37*---------------- Iuka	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods.
38----------------- Lakeland	Severe: cutbanks cave.	Slight-----------	Slight-----------	Slight------------	Slight.

See footnote at end of table.

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
39 Lakeland	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight.
40 Lakeland	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.
41 Lakeland	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
42 Leefield	Severe: wetness, cutbanks cave.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
43*, 44* Oktibbeha variant	Severe: too clayey.	Severe: low strength, shrink-swell.	Severe: low strength, shrink-swell.	Severe: low strength, shrink-swell.	Severe: low strength, shrink-swell.
45, 46 Orangeburg	Slight	Slight	Slight	Slight	Slight.
47 Orangeburg	Slight	Slight	Slight	Moderate: slope.	Slight.
48*:					
Pamlico	Severe: floods, wetness.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.
Pantego	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Rutlege	Severe: wetness, floods, cutbanks cave.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
49 Pansey	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
50*. Pits					
51 Plummer	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
52 Plummer	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness, ponds.
53, 54 Red Bay	Slight	Slight	Slight	Slight	Slight.
55 Red Bay	Slight	Slight	Slight	Moderate: slope.	Slight.
56 Rutlege	Severe: wetness, floods, cutbanks cave.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
57 Tifton	Slight	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.	Severe: low strength.
58 Tifton	Slight	Moderate: low strength.	Moderate: low strength.	Moderate: slope, low strength.	Severe: low strength.

See footnote at end of table.

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
59---------------- Troup	Severe: cutbanks cave.	Slight-----------	Slight-----------	Slight------------	Slight.
60---------------- Troup	Severe: cutbanks cave.	Slight-----------	Slight-----------	Moderate: slope.	Slight.
61---------------- Troup	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.
62*. Urban land					
63*:					
Wicksburg--------	Moderate: too clayey.	Moderate: low strength, shrink-swell.	Moderate: low strength, shrink-swell.	Moderate: low strength, shrink-swell.	Severe: low strength.
Esto-------------	Moderate: too clayey.	Moderate: low strength.	Moderate: low strength.	Moderate: low strength.	Severe: low strength.
64*:					
Yonges-----------	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods, low strength.
Herod------------	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 9.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1-------------------- Alapaha	Severe: wetness, floods.	Severe: floods.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: wetness.
2-------------------- Albany	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness, seepage.	Severe: wetness, seepage.	Poor: too sandy, wetness.
3-------------------- Apalachee	Severe: floods, wetness, percs slowly.	Severe: floods, wetness.	Severe: floods, wetness, too clayey.	Severe: floods, wetness.	Poor: too clayey, wetness.
4-------------------- Bethera	Severe: floods, wetness, percs slowly.	Slight-----------	Severe: floods, wetness, too clayey.	Severe: floods, wetness.	Poor: too clayey, wetness.
5*------------------- Bibb	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
6, 7----------------- Blanton	Slight-----------	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy, seepage.
8, 9----------------- Bonifay	Slight-----------	Moderate: seepage.	Slight-----------	Slight-----------	Poor: too sandy, seepage.
10, 11--------------- Chipola	Slight-----------	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Fair: too sandy.
12------------------- Clarendon	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Good.
13, 14, 15----------- Compass	Severe: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Good.
16*:					
Dorovan-------------	Severe: wetness, floods.	Severe: wetness, floods, excess humus.	Severe: wetness, floods, excess humus.	Severe: wetness, floods.	Poor: wetness, floods, excess humus.
Pamlico-------------	Severe: wetness, floods.	Severe: wetness, floods, excess humus.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: wetness, excess humus, hard to pack.
17, 18--------------- Dothan	Moderate: percs slowly.	Moderate: slope.	Severe: wetness.	Moderate: wetness.	Good.
19------------------- Dothan	Moderate: percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness.	Good.
20------------------- Duplin	Severe: wetness, percs slowly.	Slight-----------	Severe: wetness, too clayey.	Severe: wetness.	Fair: too clayey.

See footnote at end of table.

TABLE 9.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
21: Duplin	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Severe: wetness.	Fair: too clayey.
22, 23: Esto	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight	Fair: too clayey.
24, 25: Faceville	Slight	Moderate: slope, seepage.	Moderate: too clayey.	Slight	Fair: too clayey.
26: Faceville	Moderate: slope.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey, slope.
27*:					
Faceville	Moderate: slope.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey, slope.
Esto	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey.
28, 29: Foxworth	Moderate: wetness.	Severe: seepage.	Severe: seepage, too sandy, wetness.	Severe: seepage.	Poor: too sandy.
30, 31: Fuquay	Moderate: percs slowly.	Moderate: slope.	Slight	Slight	Good.
32*: Grady	Severe: ponds, percs slowly, wetness.	Severe: ponds.	Severe: ponds, wetness.	Severe: ponds, wetness.	Poor: wetness, too clayey.
33, 34: Greenville	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.
35, 36: Hornsville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Fair: too clayey.
37*: Iuka	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Good.
38, 39: Lakeland	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy, seepage.
40: Lakeland	Moderate: slope.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy, seepage.
41: Lakeland	Severe: slope.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage, slope.	Poor: too sandy, slope, seepage.
42: Leefield	Severe: wetness, percs slowly.	Severe: wetness, seepage.	Severe: wetness, seepage.	Severe: wetness, seepage.	Good.
43*, 44*: Oktibbeha variant	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight	Poor: too clayey.

See footnote at end of table.

TABLE 9.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
45------------------- Orangeburg	Slight-----------	Moderate: seepage.	Slight-----------	Slight-----------	Good.
46, 47-------------- Orangeburg	Slight-----------	Moderate: slope, seepage.	Slight-----------	Slight-----------	Good.
48*:					
Pamlico------------	Severe: wetness, floods.	Severe: wetness, floods, excess humus.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: wetness, excess humus, hard to pack.
Pantego------------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Rutlege------------	Severe: wetness, floods.	Severe: wetness, seepage.	Severe: wetness, floods, seepage.	Severe: wetness, floods, seepage.	Poor: wetness.
49------------------ Pansey	Severe: floods, percs slowly, wetness.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: wetness.
50*. Pits					
51------------------ Plummer	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness.	Poor: wetness.
52------------------ Plummer	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness.	Poor: wetness.
53, 54, 55---------- Red Bay	Slight-----------	Moderate: seepage.	Slight-----------	Slight-----------	Good.
56------------------ Rutlege	Severe: wetness, floods.	Severe: wetness, seepage.	Severe: wetness, floods, seepage.	Severe: wetness, floods, seepage.	Poor: wetness.
57, 58-------------- Tifton	Moderate: percs slowly.	Moderate: slope, seepage.	Slight-----------	Slight-----------	Good.
59, 60-------------- Troup	Slight-----------	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
61------------------ Troup	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
62*. Urban land					
63*:					
Wicksburg----------	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight-----------	Fair: too clayey.
Esto---------------	Severe: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight-----------	Fair: too clayey.
64*:					
Yonges-------------	Severe: wetness, floods, percs slowly.	Severe: wetness, floods, seepage.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: wetness.

See footnote at end of table.

TABLE 9.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
64*:					
Herod	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 10.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Soil name and map symbol	Limitations for--		Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1 Alapaha	Slight	Moderate: piping, hard to pack.	Poor outlets	Wetness, fast intake.	Not needed	Not needed.
2 Albany	Severe: seepage.	Moderate: seepage, wetness.	Favorable	Fast intake, wetness.	Wetness, too sandy.	Wetness.
3 Apalachee	Slight	Severe: wetness.	Percs slowly, floods.	Wetness, slow intake, percs slowly.	Not needed	Not needed.
4 Bethera	Slight	Severe: wetness.	Percs slowly, floods.	Percs slowly, wetness, floods.	Not needed	Wetness, percs slowly.
5* Bibb	Moderate: seepage.	Severe: piping, wetness.	Floods	Floods, wetness.	Not needed	Wetness.
6, 7 Blanton	Severe: seepage.	Severe: piping, seepage.	Not needed	Droughty, fast intake, soil blowing.	Soil blowing, too sandy.	Droughty.
8, 9 Bonifay	Severe: seepage.	Severe: seepage, piping.	Not needed	Fast intake, slope, droughty.	Not needed	Droughty.
10 Chipola	Severe: seepage.	Moderate: seepage, piping.	Not needed	Droughty, fast intake.	Not needed	Droughty.
11 Chipola	Severe: seepage.	Moderate: seepage, piping.	Not needed	Droughty, fast intake, slope.	Not needed	Droughty.
12 Clarendon	Moderate: seepage.	Moderate: compressible, piping.	Favorable	Favorable	Not needed	Favorable.
13 Compass	Moderate: seepage.	Moderate: wetness.	Favorable	Fast intake	Not needed	Favorable.
14, 15 Compass	Moderate: seepage.	Moderate: wetness.	Favorable	Fast intake	Favorable	Favorable.
16*:						
Dorovan	Severe: seepage.	Severe: unstable fill, excess humus.	Floods	Floods	Not needed	Not needed.
Pamlico	Severe: seepage.	Severe: piping.	Floods, poor outlets.	Wetness, floods.	Not needed	Not needed.
17, 18, 19 Dothan	Slight	Slight	Not needed	Favorable	Favorable	Favorable.
20 Duplin	Slight	Moderate: hard to pack, wetness.	Percs slowly	Wetness	Not needed	Favorable.
21 Duplin	Slight	Moderate: hard to pack, wetness.	Slope	Slope	Favorable	Favorable.

See footnote at end of table.

TABLE 10.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
22, 23 Esto	Slight	Moderate: low strength.	Not needed	Slow intake, percs slowly.	Percs slowly	Percs slowly.
24 Faceville	Moderate: seepage.	Slight	Not needed	Favorable	Favorable	Favorable.
25 Faceville	Moderate: seepage.	Slight	Not needed	Slope	Favorable	Favorable.
26 Faceville	Moderate: seepage.	Slight	Not needed	Slope	Slope	Slope.
27*:						
Faceville	Moderate: seepage.	Slight	Not needed	Slope	Slope	Slope.
Esto	Slight	Moderate: low strength.	Not needed	Percs slowly, slope.	Slope	Percs slowly, slope.
28, 29 Foxworth	Severe: seepage.	Severe: seepage.	Not needed	Droughty, fast intake.	Too sandy	Droughty.
30, 31 Fuquay	Slight	Moderate: piping.	Not needed	Fast intake	Favorable	Favorable.
32* Grady	Moderate: seepage.	Slight	Ponds, wetness, poor outlets.	Wetness, percs slowly, ponds.	Not needed	Not needed.
33 Greenville	Moderate: seepage.	Slight	Not needed	Favorable	Favorable	Favorable.
34 Greenville	Moderate: seepage.	Slight	Not needed	Slope	Favorable	Favorable.
35, 36 Hornsville	Slight	Moderate: wetness.	Favorable	Soil blowing, wetness.	Wetness	Favorable.
37* Iuka	Moderate: seepage.	Severe: piping.	Floods	Floods, wetness, fast intake.	Not needed	Wetness.
38, 39, 40, 41 Lakeland	Severe: seepage.	Severe: seepage, piping.	Not needed	Droughty, seepage, fast intake.	Not needed	Not needed.
42 Leefield	Moderate: seepage.	Moderate: wetness.	Favorable	Fast intake, wetness, droughty.	Not needed	Favorable.
43*, 44* Oktibbeha variant	Slight	Moderate: low strength, shrink-swell, unstable fill.	Not needed	Slow intake, percs slowly, slope.	Percs slowly, slope, erodes easily	Percs slowly, slope, erodes easily
45 Orangeburg	Moderate: seepage.	Slight	Not needed	Fast intake	Not needed	Favorable.
46 Orangeburg	Moderate: seepage.	Slight	Not needed	Fast intake	Favorable	Favorable.
47 Orangeburg	Moderate: seepage.	Slight	Not needed	Slope	Favorable	Favorable.
48*:						
Pamlico	Severe: seepage.	Severe: piping.	Floods, poor outlets.	Wetness, floods.	Not needed	Not needed.

See footnote at end of table.

TABLE 10.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
48*:						
Pantego	Moderate: seepage.	Slight	Poor outlets	Wetness	Not needed	Not needed.
Rutlege	Severe: seepage.	Severe: piping, seepage.	Floods, cutbanks cave	Wetness, fast intake, droughty.	Not needed	Not needed.
49 Pansey	Moderate: seepage.	Moderate: hard to pack, low strength, piping.	Floods, poor outlets.	Droughty, wetness, floods.	Not needed	Not needed.
50*. Pits						
51 Plummer	Moderate: seepage.	Moderate: seepage, piping.	Cutbanks cave, poor outlets.	Wetness	Not needed	Wetness.
52 Plummer	Moderate: seepage.	Moderate: seepage, wetness.	Ponds	Wetness, droughty, ponds.	Not needed	Wetness, droughty.
53, 54 Red Bay	Moderate: seepage.	Slight	Not needed	Favorable	Favorable	Favorable.
55 Red Bay	Moderate: seepage.	Slight	Not needed	Slope	Favorable	Favorable.
56 Rutlege	Severe: seepage.	Severe: piping, seepage.	Floods, cutbanks cave	Wetness, fast intake, droughty.	Not needed	Not needed.
57 Tifton	Moderate: seepage.	Slight	Not needed	Fast intake	Too sandy	Favorable.
58 Tifton	Moderate: seepage.	Slight	Not needed	Slope, fast intake.	Too sandy	Favorable.
59, 60, 61 Troup	Severe: seepage.	Severe: seepage, piping.	Not needed	Droughty, fast intake, seepage.	Too sandy, erodes easily piping.	Droughty, erodes easily
62*. Urban land						
63*:						
Wicksburg	Slight	Slight	Not needed	Fast intake	Too sandy	Erodes easily.
Esto	Slight	Moderate: low strength.	Not needed	Slow intake, percs slowly.	Percs slowly	Percs slowly.
64*:						
Yonges	Slight	Severe: wetness.	Floods	Wetness, floods, fast intake.	Not needed	Wetness.
Herod	Seepage	Piping	Floods	Floods	Wetness	Wetness.

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 11.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and "poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
1 Alapaha	Poor: wetness.	Poor: excess fines.	Unsuited	Poor: wetness.
2 Albany	Fair: wetness.	Poor: excess fines.	Unsuited	Poor: too sandy.
3 Apalachee	Poor: low strength, wetness, shrink-swell.	Unsuited: excess fines.	Unsuited	Poor: too clayey, wetness.
4 Bethera	Poor: wetness, low strength.	Unsuited: excess fines.	Unsuited	Poor: wetness, thin layer.
5* Bibb	Poor: wetness.	Unsuited: excess fines.	Unsuited	Poor: wetness.
6, 7 Blanton	Good	Fair: excess fines.	Unsuited	Poor: too sandy.
8, 9 Bonifay	Good	Fair: excess fines.	Unsuited	Poor: too sandy.
10, 11 Chipola	Poor: thin layer.	Poor: thin layer.	Unsuited	Fair: too sandy.
12 Clarendon	Good	Unsuited: excess fines.	Unsuited	Fair: thin layer.
13, 14, 15 Compass	Fair: shrink-swell.	Poor: excess fines.	Unsuited	Fair: too sandy, thin layer.
16*:				
Dorovan	Poor: wetness, excess humus.	Unsuited: excess fines.	Unsuited	Poor: wetness, excess humus.
Pamlico	Poor: wetness, excess humus.	Poor: excess humus.	Unsuited	Poor: wetness.
17, 18, 19 Dothan	Fair	Poor: excess fines.	Unsuited	Fair.
20, 21 Duplin	Poor: low strength.	Unsuited: excess fines.	Unsuited	Fair: thin layer.
22, 23 Esto	Poor: low strength.	Unsuited: excess fines.	Unsuited	Poor: too clayey.
24, 25 Faceville	Fair: low strength.	Unsuited: excess fines.	Unsuited	Fair: too clayey.
26 Faceville	Fair: low strength.	Unsuited: excess fines.	Unsuited	Fair: too clayey, slope.
27*:				
Faceville	Fair: low strength.	Unsuited: excess fines.	Unsuited	Fair: too clayey, slope.

See footnote at end of table.

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
27*:				
Esto	Poor: low strength.	Unsuited: excess fines.	Unsuited	Poor: too clayey.
28, 29 Foxworth	Good	Fair: excess fines.	Unsuited	Poor: too sandy.
30, 31 Fuquay	Good	Poor: excess fines.	Unsuited	Poor: too sandy.
32* Grady	Poor: wetness.	Unsuited	Unsuited	Poor: wetness.
33, 34 Greenville	Fair: low strength.	Unsuited: excess fines.	Unsuited	Fair: too clayey.
35, 36 Hornsville	Poor: low strength.	Poor: excess fines.	Unsuited	Fair: thin layer.
37* Iuka	Fair: low strength.	Poor: excess fines.	Unsuited	Good.
38, 39, 40 Lakeland	Good	Good	Unsuited	Poor: too sandy.
41 Lakeland	Fair: slope.	Good	Unsuited	Poor: too sandy, slope.
42 Leefield	Fair: wetness, low strength.	Poor: excess fines.	Unsuited	Fair: too sandy.
43*, 44* Oktibbeha variant	Poor: low strength, shrink-swell.	Unsuited: excess fines.	Unsuited	Poor: too clayey.
45, 46, 47 Orangeburg	Good	Unsuited: excess fines.	Unsuited	Fair: thin layer.
48*:				
Pamlico	Poor: wetness, excess humus.	Poor: excess humus.	Unsuited	Poor: tness.
Pantego	Poor: wetness.	Poor: excess fines.	Unsuited	Poor: wetness.
Rutlege	Poor: wetness.	Fair: excess fines.	Unsuited	Poor: wetness.
49 Pansey	Poor: wetness.	Poor: excess fines.	Unsuited	Poor: wetness.
50*. Pits				
51, 52 Plummer	Poor: wetness.	Poor: excess fines.	Unsuited	Poor: wetness, too sandy.
53, 54, 55 Red Bay	Good	Unsuited: excess fines.	Unsuited	Good.
56 Rutlege	Poor: wetness.	Fair: excess fines.	Unsuited	Poor: wetness.

See footnote at end of table.

TABLE 11.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
57, 58 Tifton	Poor: low strength.	Poor: thin layer.	Unsuited	Poor: small stones.
59, 60, 61 Troup	Good	Fair: excess fines.	Unsuited	Poor: too sandy.
62*. Urban land				
63*:				
Wicksburg	Poor: low strength.	Poor: excess fines.	Unsuited	Poor: too sandy.
Esto	Poor: low strength.	Unsuited: excess fines.	Unsuited	Poor: too clayey.
64*:				
Yonges	Poor: wetness, low strength.	Poor: excess fines.	Unsuited	Poor: wetness.
Herod	Poor: wetness.	Unsuited: excess fines.	Unsuited	Poor: wetness.

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 12.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
1 Alapaha	Severe: wetness, floods.	Severe: wetness.	Severe: wetness, floods.	Severe: wetness.
2 Albany	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
3 Apalachee	Severe: floods, too clayey, wetness.	Severe: floods, too clayey, wetness.	Severe: too clayey, wetness, floods.	Severe: wetness, too clayey, floods.
4 Bethera	Severe: floods, wetness.	Severe: wetness.	Severe: floods, wetness.	Severe: wetness.
5* Bibb	Severe: floods, wetness.	Severe: wetness.	Severe: floods, wetness.	Severe: floods, wetness.
6 Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
7 Blanton	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.
8 Bonifay	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy, slope.	Moderate: too sandy.
9 Bonifay	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.
10 Chipola	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.
11 Chipola	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.
12 Clarendon	Moderate: wetness.	Slight	Moderate: wetness.	Slight.
13 Compass	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.
14 Compass	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy, slope.	Moderate: too sandy.
15 Compass	Moderate: too sandy.	Moderate: too sandy.	Severe: slope.	Moderate: too sandy.
16*:				
Dorovan	Severe: wetness, floods, excess humus.	Severe: wetness, floods, excess humus.	Severe: wetness, floods, excess humus.	Severe: wetness, floods, excess humus.
Pamlico	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.

See footnote at end of table.

TABLE 12.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
17 Dothan	Slight	Slight	Moderate: slope.	Slight.
18 Dothan	Slight	Slight	Severe: slope.	Slight.
19 Dothan	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
20 Duplin	Moderate: percs slowly, wetness.	Slight	Moderate: wetness, percs slowly.	Slight.
21 Duplin	Moderate: percs slowly, wetness.	Slight	Moderate: slope, percs slowly.	Slight.
22 Esto	Moderate: percs slowly.	Slight	Moderate: percs slowly, slope.	Slight.
23 Esto	Moderate: percs slowly.	Slight	Severe: slope.	Slight.
24 Faceville	Slight	Slight	Moderate: slope.	Slight.
25 Faceville	Slight	Slight	Severe: slope.	Slight.
26 Faceville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
27*:				
Faceville	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: too clayey.
Esto	Moderate: percs slowly, slope.	Moderate: slope.	Severe: slope.	Slight.
28 Foxworth	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
29 Foxworth	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.
30 Fuquay	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
31 Fuquay	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.
32* Grady	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness, ponds.
33 Greenville	Slight	Slight	Moderate: slope.	Slight.
34 Greenville	Slight	Slight	Severe: slope.	Slight.
35 Hornsville	Moderate: percs slowly.	Slight	Moderate: percs slowly.	Slight.

See footnote at end of table.

TABLE 12.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
36-------------------- Hornsville	Moderate: percs slowly.	Slight---------------	Moderate: slope, percs slowly.	Slight.
37*------------------- Iuka	Severe: floods.	Moderate: wetness, floods.	Severe: floods.	Slight.
38-------------------- Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.
39, 40---------------- Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy, slope.	Severe: too sandy.
41-------------------- Lakeland	Severe: too sandy, slope.	Severe: too sandy, slope.	Severe: too sandy, slope.	Severe: too sandy.
42-------------------- Leefield	Moderate: wetness, too sandy, percs slowly.	Moderate: wetness, too sandy.	Moderate: slope, too sandy, wetness.	Moderate: too sandy.
43*------------------- Oktibbeha variant	Severe: too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey, percs slowly.	Severe: too clayey.
44*------------------- Oktibbeha variant	Severe: too clayey, percs slowly.	Severe: too clayey.	Severe: too clayey, percs slowly, slope.	Severe: too clayey.
45-------------------- Orangeburg	Slight---------------	Slight---------------	Slight---------------	Slight.
46-------------------- Orangeburg	Slight---------------	Slight---------------	Moderate: slope.	Slight.
47-------------------- Orangeburg	Slight---------------	Slight---------------	Severe: slope.	Slight.
48*:				
Pamlico---------------	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
Pantego---------------	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Rutlege---------------	Severe: wetness, floods.	Severe: wetness.	Severe: wetness.	Severe: wetness.
49-------------------- Pansey	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
50*. Pits				
51-------------------- Plummer	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
52-------------------- Plummer	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness, ponds.	Severe: wetness, ponds.
53-------------------- Red Bay	Slight---------------	Slight---------------	Slight---------------	Slight.

See footnote at end of table.

TABLE 12.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
54 Red Bay	Slight	Slight	Moderate: slope.	Slight.
55 Red Bay	Slight	Slight	Severe: slope.	Slight.
56 Rutlege	Severe: wetness, floods.	Severe: wetness.	Severe: wetness.	Severe: wetness.
57 Tifton	Slight	Slight	Moderate: slope, small stones.	Slight.
58 Tifton	Slight	Slight	Severe: slope.	Slight.
59, 60 Troup	Moderate: too sandy.	Moderate: too sandy.	Severe: too sandy.	Moderate: too sandy.
61 Troup	Moderate: slope, too sandy.	Moderate: slope, too sandy.	Severe: too sandy.	Moderate: too sandy.
62*. Urban land				
63*: Wicksburg	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.
Esto	Moderate: percs slowly.	Slight	Moderate: percs slowly, slope.	Slight.
64*: Yonges	Severe: wetness, floods.	Severe: wetness.	Severe: wetness, floods.	Severe: wetness.
Herod	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 13.--WILDLIFE HABITAT POTENTIALS

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
1-----------------Alapaha	Very poor.	Poor	Fair	Fair	Fair	---	Fair	Fair	Poor	Fair	Fair	---
2-----------------Albany	Fair	Fair	Fair	Fair	Fair	---	Fair	Poor	Fair	Fair	Poor	---
3-----------------Apalachee	Poor	Fair	Fair	Fair	Poor	---	Fair	Good	Fair	Fair	Fair	---
4-----------------Bethera	Fair	Fair	Fair	Good	Good	---	Good	Good	Fair	Good	Good	---
5*----------------Bibb	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good	---
6, 7--------------Blanton	Poor	Fair	Fair	Poor	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.	---
8, 9--------------Bonifay	Poor	Fair	Poor	Poor	Poor	---	Very poor.	Very poor.	Poor	Fair	Very poor.	---
10, 11------------Chipola	Poor	Fair	Good	Fair	Fair	---	Poor	Very poor.	Fair	Fair	Very poor.	---
12----------------Clarendon	Good	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor	---
13, 14, 15--------Compass	Poor	Fair	Good	Fair	Fair	---	Poor	Poor	Fair	Fair	Poor	---
16*:												
Dorovan-----------	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	---	Good	Good	Very poor.	Very poor.	Good	---
Pamlico-----------	Poor	Good	Good	Good	Good	---	Poor	Good	Good	Good	Fair	---
17, 18, 19--------Dothan	Good	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
20----------------Duplin	Good	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor	---
21----------------Duplin	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.	---
22----------------Esto	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.	---
23----------------Esto	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
24----------------Faceville	Good	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
25, 26------------Faceville	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
27*:												
Faceville---------	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
Esto--------------	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---

See footnote at end of table.

TABLE 13.--WILDLIFE HABITAT POTENTIALS--Continued

Soil name and map symbol	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
28, 29------------- Foxworth	Poor	Poor	Fair	Fair	Fair	---	Very poor.	Very poor.	Poor	Fair	Very poor.	---
30----------------- Fuquay	Fair	Fair	Good	Fair	Fair	---	Poor	Very poor.	Good	Fair	Very poor.	---
31----------------- Fuquay	Poor	Fair	Good	Fair	Fair	---	Poor	Very poor.	Fair	Fair	Very poor.	---
32*---------------- Grady	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good	---
33----------------- Greenville	Good	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
34----------------- Greenville	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
35, 36------------- Hornsville	Good	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor	---
37*---------------- Iuka	Poor	Fair	Fair	Good	Good	---	Poor	Poor	Fair	Good	Poor	---
38, 39, 40, 41----- Lakeland	Poor	Fair	Fair	Poor	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.	---
42----------------- Leefield	Fair	Fair	Good	Fair	Fair	---	Fair	Fair	Fair	Fair	Fair	---
43*---------------- Oktibbeha variant	Fair	Fair	Fair	Good	Good	---	Poor	Very poor.	Fair	Good	Poor	---
44*---------------- Oktibbeha	Fair	Fair	Fair	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.	---
45, 46------------- Orangeburg	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.	---
47----------------- Orangeburg	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
48*:												
Pamlico-----------	Poor	Good	Good	Good	Good	---	Poor	Good	Good	Good	Fair	---
Pantego-----------	Fair	Good	Good	Good	Good	---	Poor	Fair	Good	Good	Poor	---
Rutlege-----------	Very poor.	Poor	Poor	Poor	Poor	---	Fair	Good	Poor	Poor	Fair	---
49----------------- Pansey	Poor	Fair	Fair	Fair	Fair	---	Good	Good	Fair	Fair	Good	---
50*. Pits												
51----------------- Plummer	Poor	Fair	Fair	Fair	Fair	---	Fair	Fair	Fair	Fair	Fair	---
52----------------- Plummer	Very poor.	Very poor.	Very poor.	Fair	Very poor.	---	Fair	Good	Very poor.	Very poor.	Good	---
53, 54------------- Red Bay	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.	---
55----------------- Red Bay	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.	---

See footnote at end of table.

TABLE 13.--WILDLIFE HABITAT POTENTIALS--Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
56------------------ Rutlege	Very poor.	Poor	Poor	Poor	Poor	---	Fair	Good	Poor	Poor	Fair	---
57------------------ Tifton	Good	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
58------------------ Tifton	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.	---
59, 60, 61---------- Troup	Poor	Fair	Fair	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.	---
62*. Urban land												
63*:												
Wicksburg----------	Poor	Fair	Good	Fair	Fair	---	Very poor.	Very poor.	Fair	Fair	Very poor.	---
Esto---------------	Good	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.	---
64*: Yonges.												
Herod--------------	Poor	Poor	Fair	Fair	Fair	---	Good	Fair	Poor	Fair	Fair	---

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 14.--ENGINEERING PROPERTIES AND CLASSIFICATIONS

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 3 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct					Pct	
1------------------ Alapaha	0-34	Loamy sand------	SM	A-2	0	100	99-100	70-95	15-31	---	NP
	34-62	Sandy clay loam	SC	A-2, A-4, A-6	0	93-100	88-100	66-90	29-40	22-30	7-22
2------------------ Albany	0-46	Sand------------	SM	A-2	0	100	100	75-90	12-23	---	NP
	46-67	Sandy loam------	SM	A-2	0	100	100	75-92	22-30	---	NP
	67-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	97-100	95-100	70-100	25-50	<40	NP-21
3------------------ Apalachee	0-25	Clay------------	MH	A-7	0	100	100	65-95	65-85	55-100	20-45
	25-60	Clay, silty clay	CH	A-7	0	100	100	85-95	75-95	50-70	25-40
4------------------ Bethera	0-6	Silt loam--------	CL	A-4, A-6	0	100	95-100	85-95	60-75	30-37	8-14
	6-72	Clay, clay loam, sandy clay.	CL, CH, ML	A-6, A-7	0	100	98-100	93-100	55-95	37-55	12-30
5*----------------- Bibb	0-18	Loamy sand, sandy loam.	SM, SM-SC, ML, CL-ML	A-2, A-4	0-5	95-100	90-100	60-90	30-60	<25	NP-7
	18-62	Sandy loam, loam, silt loam.	SM, SM-SC, ML, CL-ML	A-2, A-4, A-6	0-10	60-100	50-100	40-100	28-90	<35	NP-12
6, 7--------------- Blanton	0-67	Coarse sand-----	SP-SM	A-3, A-2-4	0	100	100	65-100	5-12	---	NP
	67-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM-SC, SM	A-4, A-2-4, A-2-6, A-6	0	100	100	69-95	25-50	18-35	4-12
8, 9--------------- Bonifay	0-45	Sand------------	SP-SM	A-3, A-2-4	0	98-100	98-100	60-95	5-12	---	NP
	45-68	Sandy loam, sandy clay loam.	SM-SC, SC, SM	A-2-4, A-4	0	95-100	90-100	70-95	30-50	<30	NP-10
10, 11------------- Chipola	0-35	Loamy coarse sand, loamy sand.	SP-SM, SM	A-2-4	0	100	95-100	75-90	11-25	---	NP
	35-56	Coarse sandy loam, sandy clay loam.	SM-SC, SC, SM	A-2-4, A-4	0	95-100	95-100	59-90	20-50	<30	NP-10
	56-75	Loamy coarse sand, sandy loam.	SM, SM-SC	A-2-4	0	95-100	90-95	75-90	13-35	<28	NP-7
	75-94	Sand, coarse sand.	SP-SM	A-3, A-2-4	0	95-100	90-95	51-70	5-12	---	NP
12----------------- Clarendon	0-16	Fine sandy loam	SM, SC, SM-SC	A-2, A-4	0	98-100	95-100	70-95	20-45	<30	NP-10
	16-26	Sandy clay loam	SC, CL, SM-SC, CL-ML	A-4, A-6	0	98-100	95-100	75-95	36-55	20-40	5-20
	26-84	Sandy clay loam	SC, CL, SM-SC, CL-ML	A-2, A-4, A-6	0	99-100	98-100	80-95	30-55	20-40	5-20

See footnote at end of table.

TABLE 14.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 3 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct					Pct	
13, 14, 15--------- Compass	0-16	Loamy sand------	SM	A-2-4	0	95-100	95-100	75-95	13-25	---	NP
	16-33	Sandy loam, fine sandy loam.	SM	A-2-4	0	95-100	95-100	75-95	20-30	<10	NP-3
	33-57	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2-4, A-2-6, A-4, A-6	0	100	100	75-100	20-50	<40	NP-20
	57-74	Sandy clay, clay	SC, CL	A-6, A-7	0	100	100	90-100	40-65	28-45	11-23
16*:											
Dorovan-----------	0-80	Muck------------	PT	---	0	---	---	---	---	---	---
Pamlico-----------	0-36	Muck------------	PT	---	0	---	---	---	---	---	---
	36-60	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	0	100	100	70-95	5-20	---	NP
17, 18, 19--------- Dothan	0-14	Loamy sand------	SM	A-2	0	95-100	92-100	60-80	13-30	---	NP
	14-56	Sandy clay loam, sandy loam.	SM-SC, SC, SM	A-2, A-4, A-6	0	95-100	92-100	68-90	23-45	<40	NP-18
	56-72	Sandy clay loam, sandy clay.	SM-SC, SC	A-2, A-4, A-6, A7	0	95-100	92-100	70-95	30-50	25-45	4-18
20, 21------------- Duplin	0-9	Fine sandy loam	SM, ML, SM-SC, CL-ML	A-2, A-4	0	100	100	67-98	24-58	<16	NP-7
	9-64	Sandy clay, clay loam, clay.	CL, CH	A-6, A-7	0	100	98-100	80-100	50-82	24-58	13-39
22, 23------------- Esto	0-12	Loamy sand------	SM, SP-SM	A-2	0	90-100	90-100	50-85	10-35	---	NP
	12-18	Clay loam, sandy clay, sandy clay loam.	CL, SC	A-6, A-7	0	95-100	95-100	90-100	45-90	35-50	12-25
	18-80	Clay loam, clay, sandy clay.	CL, CH, MH	A-6, A-7	0	95-100	95-100	90-100	51-90	35-59	18-35
24, 25, 26--------- Faceville	0-5	Loamy fine sand	SM	A-2	0	90-100	85-100	72-97	13-25	---	NP
	5-20	Sandy clay loam, sandy clay.	SC, ML, CL, SM	A-4, A-6	0	98-100	90-100	85-98	46-66	<35	NP-13
	20-70	Sandy clay, clay, clay loam.	CL, SC	A-6, A-7	0	98-100	95-100	75-99	45-72	25-48	11-27
27*:											
Faceville---------	0-5	Sandy clay loam	SM, CL-ML, ML, SM-SC	A-4	0	90-100	90-100	63-97	40-58	<25	NP-7
	5-11	Sandy clay loam, sandy clay.	SC, ML, CL, SM	A-4, A-6	0	98-100	90-100	85-98	46-66	<35	NP-13
	11-72	Sandy clay, clay, clay loam.	CL, SC	A-6, A-7	0	98-100	95-100	75-99	45-72	25-48	11-27
Esto--------------	0-8	Fine sandy loam	SM, SM-SC, ML, CL-ML	A-4	0	95-100	95-100	70-96	40-55	<20	NP-4
	8-13	Clay loam, sandy clay, sandy clay loam.	CL, SC	A-6, A-7	0	95-100	95-100	90-100	45-90	35-50	12-25
	13-62	Clay loam, clay, sandy clay.	CL, CH, MH	A-6, A-7	0	95-100	95-100	90-100	51-90	35-59	18-35

See footnote at end of table.

TABLE 14.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments > 3 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct					Pct	
28, 29------------- Foxworth	0-52	Sand------------	SP-SM	A-3, A-2-4	0	100	100	60-100	5-12	---	NP
	52-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	100	100	50-100	1-12	---	NP
30, 31------------- Fuquay	0-32	Coarse sand, loamy coarse sand.	SP-SM, SM	A-2, A-3	0	95-100	90-100	50-83	5-35	---	NP
	32-44	Coarse sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	85-100	85-100	60-80	23-45	<25	NP-13
	44-80	Sandy clay loam	SC, CL	A-2, A-4, A-6, A-7	0	95-100	90-100	60-93	28-55	20-41	8-25
32*----------------- Grady	0-6	Fine sandy loam	SM, ML, CL-ML, SM-SC	A-4, A-6	0	100	99-100	85-100	40-75	<30	NP-15
	6-76	Clay, sandy clay	CL, ML, CH	A-6, A-7	0	100	100	90-100	55-90	30-50	12-25
33, 34------------- Greenville	0-8	Fine sandy loam	SM, SC, SM-SC, ML	A-2, A-4	0	95-100	90-100	75-95	30-70	<30	NP-10
	8-72	Sandy clay loam, sandy clay, clay.	CL, SC	A-6, A-7	0	98-100	95-100	80-95	35-65	30-49	11-25
35, 36------------- Hornsville	0-9	Fine sandy loam	SM	A-2-4, A-4	0	100	100	60-95	30-50	<30	NP-7
	9-43	Sandy clay, clay loam, clay.	SC, CL, CH	A-6, A-7	0	100	100	70-98	45-70	38-56	15-25
	43-76	Sandy clay loam, sandy loam, fine sandy loam.	SM, SM-SC, SC	A-2-4, A-4, A-6	0	100	100	60-100	18-50	<30	NP-12
37*----------------- Iuka	0-16	Loam------------	SM, SM-SC, ML, CL-ML	A-4	0	95-100	90-100	70-95	45-75	12-30	NP-7
	16-25	Fine sandy loam, loam, sandy loam.	SM, SM-SC, ML, CL-ML	A-4	0	95-100	85-100	65-100	36-71	12-30	NP-7
	25-72	Sandy loam, fine sandy loam, loam.	SM, ML	A-2, A-4	0	95-100	90-100	70-100	25-55	12-30	NP-5
38, 39, 40, 41----- Lakeland	0-40	Sand------------	SP-SM	A-3, A-2-4	0	90-100	90-100	60-100	5-12	---	NP
	40-82	Sand, fine sand	SP, SP-SM	A-3, A-2-4	0	90-100	90-100	50-100	1-12	---	NP
42----------------- Leefield	0-22	Loamy sand------	SM, SW-SM, SP-SM	A-2	0	98-100	95-100	65-95	10-20	---	NP
	22-43	Sandy loam, sandy clay loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	95-100	93-100	65-95	20-40	<40	NP-16
	43-84	Sandy loam, sandy clay loam.	SC, SM, SM-SC	A-2, A-4, A-6	0	95-100	95-100	65-90	20-40	<40	NP-20
43*, 44*----------- Oktibbeha variant	0-2	Sandy clay------	CL, ML, CH	A-6, A-7	0	100	100	70-100	55-90	30-50	12-25
	2-48	Clay------------	CH	A-7	0	100	95-100	95-100	95-100	55-95	30-61

See footnote at end of table.

TABLE 14.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
45, 46, 47: Orangeburg	0-9	Loamy sand	SM	A-2	0	98-100	95-100	60-75	14-27	---	NP
	9-72	Sandy clay loam	SC, CL	A-6, A-4, A-2, A-7	0	98-100	95-100	70-91	30-55	22-41	8-26
48*:											
Pamlico	0-36	Muck	PT	---	0	---	---	---	---	---	---
	36-60	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	0	100	100	70-95	5-20	---	NP
Pantego	0-18	Sandy loam	SM, SM-SC, CL, CL-ML	A-2, A-4	0	100	100	60-95	25-75	<30	NP-12
	18-72	Sandy clay loam, sandy loam, clay loam.	SC, CL, SM	A-4, A-6, A-2	0	100	95-100	80-100	30-80	25-40	4-16
Rutlege	0-23	Loamy sand	SM, SP-SM	A-2, A-3	0	95-100	95-100	50-85	5-25	---	NP
	23-80	Loamy sand, sand, sandy loam.	SM, SP-SM, SP	A-2, A-3	0	95-100	95-100	50-85	2-25	---	NP
49: Pansey	0-19	Fine sandy loam	SM	A-2, A-4	0	100	95-100	80-100	20-45	<32	NP-5
	19-26	Sandy loam, sandy clay loam.	SM	A-2, A-4	0	100	95-100	80-100	25-40	<30	NP-6
	26-53	Sandy clay loam	SM-SC, SM, SC	A-2, A-4	0	100	95-100	70-95	30-50	<34	NP-14
	53-80	Sandy clay loam	SM-SC, SM, SC	A-2, A-4, A-6	0	100	95-100	70-95	25-40	<30	NP-11
50*. Pits											
51, 52: Plummer	0-56	Sand	SM, SP-SM	A-2, A-3	0	100	100	75-96	5-26	---	NP
	56-80	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2	0	100	97-100	76-96	26-35	<26	NP-9
53, 54, 55: Red Bay	0-9	Fine sandy loam	SM	A-2, A-4	0	100	95-100	60-85	15-45	<20	NP-4
	9-16	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4	0	100	95-100	60-85	15-50	<35	NP-10
	16-76	Sandy clay loam	SM, SM-SC, SC	A-2, A-4, A-6	0	100	95-100	70-90	24-50	25-40	5-23
56: Rutlege	0-23	Loamy sand	SM, SP-SM	A-2, A-3	0	95-100	95-100	50-85	5-25	---	NP
	23-80	Loamy sand, sand, sandy loam.	SM, SP-SM, SP	A-2, A-3	0	95-100	95-100	50-85	2-25	---	NP
57, 58: Tifton	0-17	Loamy sand	SM, SP-SM, SM-SC	A-2	0	70-95	62-89	53-85	11-27	<25	NP-5
	17-20	Sandy loam, sandy clay loam.	SM, SM-SC	A-2	0	70-95	56-89	55-89	20-35	<25	NP-7
	20-31	Sandy clay loam	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6, A-7-6	0	70-95	65-89	60-81	33-53	22-42	5-25
	31-68	Sandy clay loam	SC, CL	A-2, A-6, A-7	0	87-100	80-100	70-94	34-55	24-45	11-25

See footnote at end of table.

TABLE 14.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
59, 60, 61--------- Troup	0-57	Fine sand-------	SM	A-2, A-4	0	100	100	65-90	15-40	---	NP
	57-75	Sandy loam, sandy clay loam.	SC, SM-SC, SM	A-4, A-2	0	95-100	90-100	75-90	20-45	<30	NP-10
62*. Urban land											
63*: Wicksburg---------	0-26	Loamy sand------	SM	A-2	0	100	90-100	50-80	15-35	---	NP
	26-32	Sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-4, A-6	0	100	98-100	80-100	36-80	<35	NP-15
	32-65	Clay loam, sandy clay, clay.	CL	A-6, A-7	0	100	98-100	85-100	50-95	35-45	15-25
Esto--------------	0-12	Loamy sand------	SM, SP-SM	A-2	0	90-100	90-100	50-85	10--5	---	NP
	12-18	Clay loam, sandy clay, sandy clay loam.	CL, SC	A-6, A-7	0	95-100	95-100	90-100	45-90	35-50	12-25
	18-60	Clay loam, clay, sandy clay.	CL, CH, MH	A-6, A-7	0	95-100	95-100	90-100	51-90	35-55	18-30
64*: Yonges------------	0-8	Fine sandy loam	SM, ML	A-2, A-4	0	100	100	90-100	25-55	<30	NP-7
	8-72	Sandy clay loam, clay loam.	CL-ML, CL, SC, SM-SC	A-4, A-6, A-7	0	100	100	95-100	40-70	25-45	6-28
	72-84	Fine sandy loam, sandy clay loam.	CL, ML SC, SM	A-4, A-6	0	100	100	80-100	40-65	20-40	3-22
Herod-------------	0-22	Sandy loam------	SM, SC, CL, ML	A-2, A-4	0	100	95-100	50-90	30-75	<30	NP-10
	22-62	Sandy loam, sandy clay loam.	CL, SM, ML, SC	A-4, A-6	0	100	95-100	70-90	36-60	<30	NP-15

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[The symbol < means less than; > means greater than. The erosion tolerance factor (T) is for the entire profile. Wind erodibility group is for the surface layer. Absence of an entry means data were not available or were not estimated]

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group
	In	In/hr	In/in	pH				
1----------------- Alapaha	0-34	6.0-20	0.05-0.08	4.5-5.5	Low-----------	0.15	5	2
	34-62	0.2-0.6	0.08-0.10	4.5-5.5	Low-----------	0.28		
2----------------- Albany	0-46	6.0-20	0.02-0.04	4.5-6.5	Low-----------	0.17	5	2
	46-67	2.0-6.0	0.08-0.10	4.5-6.0	Low-----------	0.20		
	67-80	0.6-2.0	0.10-0.16	4.5-6.0	Low-----------	0.24		
3----------------- Apalachee	0-25	0.06-0.2	0.12-0.18	4.5-5.5	High----------	0.32	5	4
	25-60	0.06-0.2	0.12-0.18	4.5-5.5	High----------	0.32		
4----------------- Bethera	0-6	0.6-2.0	0.11-0.16	3.6-6.0	Low-----------	0.28	5	6
	6-72	0.06-0.6	0.14-0.18	3.6-6.0	Moderate------	0.32		
5*---------------- Bibb	0-18	0.6-2.0	0.12-0.18	4.5-5.5	Low-----------	0.20	5	3
	18-62	0.6-2.0	0.12-0.20	4.5-5.5	Low-----------	0.37		
6, 7-------------- Blanton	0-67	6.0-20	0.03-0.07	4.5-6.0	Very low------	0.17	5	2
	67-80	0.6-2.0	0.10-0.15	4.5-5.5	Low-----------	0.32		
8, 9-------------- Bonifay	0-45	6.0-20	0.03-0.08	4.5-5.5	Low-----------	0.17	5	2
	45-68	0.6-2.0	0.10-0.15	4.5-5.5	Low-----------	0.24		
10, 11------------ Chipola	0-35	6.0-20	0.06-0.10	4.5-6.0	Low-----------	0.17	5	2
	35-56	2.0-6.0	0.10-0.17	4.5-5.5	Low-----------	0.28		
	56-75	2.0-20	0.06-0.14	4.5-5.5	Low-----------	0.20		
	75-94	>20	0.02-0.06	4.5-5.5	Low-----------	0.15		
12---------------- Clarendon	0-16	2.0-6.0	0.10-0.14	4.5-6.5	Low-----------	0.15	5	3
	16-26	0.6-2.0	0.10-0.15	4.5-5.5	Low-----------	0.20		
	26-84	0.2-0.6	0.08-0.12	4.5-5.5	Low-----------	0.15		
13, 14, 15-------- Compass	0-16	6.0-20	0.05-0.10	4.5-5.5	Low-----------	0.24	5	2
	16-33	2.0-6.0	0.10-0.15	4.5-5.5	Low-----------	0.24		
	33-57	0.6-2.0	0.10-0.15	4.5-5.5	Low-----------	0.32		
	57-74	0.2-0.6	0.14-0.18	4.5-5.5	Moderate------	0.28		
16*:								
Dorovan----------	0-80	<0.06	0.25-0.50	4.5-5.5	--------------	---	---	2
Pamlico----------	0-36	0.6-2.0	0.24-0.26	3.6-4.4	--------------	---	---	2
	36-60	6.0-20	0.03-0.06	3.6-5.5	Low-----------	---		
17, 18, 19-------- Dothan	0-14	2.0-6.0	0.06-0.10	4.5-5.5	Very low------	0.20	4	2
	14-56	0.6-2.0	0.10-0.14	4.5-5.5	Low-----------	0.28		
	56-72	0.2-0.6	0.08-0.12	4.5-5.5	Low-----------	0.28		
20, 21------------ Duplin	0-9	2.0-6.0	0.10-0.15	5.1-7.3	Low-----------	0.32	3	3
	9-64	0.2-0.6	0.13-0.18	4.5-6.0	Moderate------	0.28		
22, 23------------ Esto	0-12	6.0-20	0.06-0.10	4.5-5.5	Low-----------	0.24	3	2
	12-18	0.6-2.0	0.12-0.17	4.5-5.5	Moderate------	0.32		
	18-80	0.06-0.2	0.12-0.18	4.5-5.5	Moderate------	0.32		
24, 25, 26-------- Faceville	0-5	6.0-20	0.06-0.09	4.5-5.5	Low-----------	0.28	5	3
	5-20	0.6-2.0	0.12-0.15	4.5-5.5	Low-----------	0.37		
	20-70	0.6-2.0	0.12-0.18	4.5-5.5	Low-----------	0.37		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group
	In	In/hr	In/in	pH				
27*:								
Faceville--------	0-5	0.6-2.0	0.10-0.13	4.5-5.5	Low-----------	0.32	3	5
	5-11	0.6-2.0	0.12-0.15	4.5-5.5	Low-----------	0.37		
	11-72	0.6-2.0	0.12-0.18	4.5-5.5	Low-----------	0.37		
Esto-------------	0-8	2.0-6.0	0.11-0.15	4.5-5.5	Low-----------	0.28	3	3
	8-13	0.6-2.0	0.12-0.17	4.5-5.5	Moderate------	0.32		
	13-62	0.06-0.2	0.12-0.18	4.5-5.5	Moderate------	0.32		
28, 29----------- Foxworth	0-52	>20	0.05-0.10	4.5-6.0	Low-----------	0.17	5	2
	52-80	>20	0.03-0.08	4.5-6.0	Low-----------	0.17		
30, 31----------- Fuquay	0-32	>6.0	0.04-0.09	4.5-5.5	Low-----------	0.20	5	2
	32-44	0.6-2.0	0.12-0.15	4.5-5.5	Low-----------	0.20		
	44-80	0.06-0.2	0.10-0.13	4.5-5.5	Low-----------	0.20		
32*-------------- Grady	0-6	0.6-2.0	0.10-0.18	4.5-6.5	Low-----------	0.10	5	3
	6-76	0.06-0.2	0.12-0.16	4.5-5.5	Moderate------	0.10		
33, 34----------- Greenville	0-8	0.6-2.0	0.11-0.15	4.5-5.5	Low-----------	0.24	5	3
	8-72	0.6-2.0	0.14-0.18	4.5-5.5	Low-----------	0.17		
35, 36----------- Hornsville	0-9	6.0-20	0.08-0.12	4.5-6.0	Low-----------	0.20	5	3
	9-43	0.2-0.6	0.12-0.16	4.5-5.5	Low-----------	0.28		
	43-76	0.6-2.0	0.10-0.14	4.5-5.5	Low-----------	0.32		
37*-------------- Iuka	0-16	0.6-2.0	0.10-0.15	5.1-6.0	Low-----------	0.24	5	5
	16-25	0.6-2.0	0.10-0.15	4.5-5.5	Low-----------	0.28		
	25-72	0.6-2.0	0.10-0.15	4.5-5.5	Low-----------	0.20		
38, 39, 40, 41--- Lakeland	0-40	>20	0.05-0.08	4.5-6.0	Very low------	0.17	5	2
	40-82	>20	0.03-0.08	4.5-6.0	Very low------	0.17		
42--------------- Leefield	0-22	6.0-20	0.04-0.07	4.5-6.0	Low-----------	0.10	5	2
	22-43	0.6-2.0	0.10-0.13	4.5-5.5	Low-----------	0.15		
	43-84	0.2-0.6	0.08-0.12	4.5-5.5	Low-----------	0.10		
43*, 44*--------- Oktibbeha variant	0-2	0.6-2.0	0.14-0.18	4.5-6.5	Low-----------	0.32	3	5
	2-48	<0.06	0.12-0.16	4.5-6.5	High----------	0.32		
45, 46, 47------- Orangeburg	0-9	2.0-6.0	0.06-0.08	4.5-6.5	Low-----------	0.20	5	2
	9-72	0.6-2.0	0.10-0.13	4.5-5.5	Low-----------	0.24		
48*:								
Pamlico----------	0-36	0.6-2.0	0.24-0.26	3.6-4.4	--------------	---	---	2
	36-60	6.0-20	0.03-0.06	3.6-5.5	Low-----------	---		
Pantego----------	0-18	2.0-6.0	0.10-0.20	3.6-5.5	Low-----------	0.15	5	3
	18-72	0.6-2.0	0.12-0.20	3.6-5.5	Low-----------	0.28		
Rutlege----------	0-23	6.0-20	0.04-0.10	3.6-5.0	Low-----------	0.17	5	2
	23-80	6.0-20	0.04-0.08	3.6-5.0	Low-----------	0.15		
49--------------- Pansey	0-19	2.0-6.0	0.05-0.10	4.5-5.5	Low-----------	0.32	5	3
	19-26	2.0-6.0	0.10-0.14	4.5-5.5	Low-----------	0.37		
	26-53	0.6-2.0	0.10-0.14	4.5-5.5	Low-----------	0.37		
	53-80	0.06-0.2	0.10-0.14	4.5-5.5	Low-----------	0.37		
50*. Pits								
51, 52----------- Plummer	0-56	2.0-6.0	0.03-0.08	4.5-5.5	Very low------	0.10	5	2
	56-80	0.6-2.0	0.10-0.13	4.5-5.5	Very low------	0.15		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group
	In	In/hr	In/in	pH				
53, 54, 55------- Red Bay	0-9	2.0-6.0	0.07-0.14	4.5-6.0	Low-----------	0.20	5	3
	9-16	0.6-6.0	0.10-0.14	4.5-5.5	Low-----------	0.24		
	16-76	0.6-2.0	0.10-0.17	4.5-5.5	Low-----------	0.28		
56--------------- Rutlege	0-23	6.0-20	0.04-0.10	3.6-5.0	Low-----------	0.17	5	2
	23-80	6.0-20	0.04-0.08	3.6-5.0	Low-----------	0.15		
57, 58----------- Tifton	0-17	6.0-20	0.03-0.08	4.5-6.0	Low-----------	0.20	4	2
	17-20	6.0-20	0.08-0.12	4.5-6.0	Low-----------	0.24		
	20-31	0.6-2.0	0.12-0.15	4.5-5.5	Low-----------	0.24		
	31-68	0.6-2.0	0.10-0.13	4.5-5.5	Low-----------	0.17		
59, 60, 61------- Troup	0-57	6.0-20	0.05-0.10	4.5-6.0	Very low------	0.17	5	2
	57-75	0.6-2.0	0.10-0.13	4.5-5.5	Low-----------	0.24		
62*. Urban land								
63*: Wicksburg-------	0-26	6.0-20	0.05-0.11	4.5-5.5	Low-----------	0.17	5	2
	26-32	0.06-2.0	0.12-0.18	4.5-5.5	Low-----------	0.20		
	32-65	0.06-0.2	0.14-0.18	4.5-5.5	Moderate------	0.24		
Esto------------	0-12	6.0-20	0.06-0.10	4.5-5.5	Low-----------	0.24	3	2
	12-18	0.6-2.0	0.12-0.17	4.5-5.5	Moderate------	0.32		
	18-60	0.06-0.2	0.12-0.18	4.5-5.5	Moderate------	0.32		
64*: Yonges----------	0-8	0.6-6.0	0.09-0.14	5.1-7.3	Low-----------	0.15	5	3
	8-72	0.2-0.6	0.13-0.18	5.1-8.4	Low-----------	0.17		
	72-84	0.6-2.0	0.12-0.16	6.1-8.4	Low-----------	0.20		
Herod-----------	0-22	0.6-2.0	0.12-0.20	5.1-6.0	Low-----------	---	5	3
	22-62	0.6-2.0	0.12-0.16	5.6-7.3	Low-----------	---		

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 16.--SOIL AND WATER FEATURES

[The definitions of "flooding" and "water table" in the Glossary explain terms such as "rare," "brief," "apparent," and "perched." The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern]

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard-ness	Ini-tial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
1----------------- Alapaha	D	Occasional	Brief-----	Jan-Apr	1.0-2.0	Apparent	Dec-May	>60	---	---	---	High-----	High.
2----------------- Albany	C	Rare---------	---	---	1.0-2.5	Apparent	Dec-Mar	>60	---	---	---	High-----	High.
3----------------- Apalachee	D	Frequent----	Very long	Jan-Apr	0-2.0	Apparent	Dec-Apr	>60	---	---	---	High-----	High.
4----------------- Bethera	D	Common------	Brief-----	Dec-Mar	0-1.5	Apparent	Dec-Apr	>60	---	---	---	High-----	High.
5*---------------- Bibb	C	Common------	Brief-----	Dec-May	0.5-1.5	Apparent	Dec-Apr	>60	---	---	---	High-----	Moderate.
6, 7-------------- Blanton	A	None---------	---	---	>6.0	---	---	>60	---	---	---	High-----	High.
8, 9-------------- Bonifay	A	None---------	---	---	>6.0	---	---	>60	---	---	---	Low------	High.
10, 11------------ Chipola	A	None---------	---	---	>6.0	---	---	>60	---	---	---	Low------	High.
12---------------- Clarendon	C	None---------	---	---	1.5-2.5	Apparent	Dec-Mar	>60	---	---	---	Moderate	High.
13, 14, 15-------- Compass	B	None---------	---	---	2.5-3.5	Perched	Jan-May	>60	---	---	---	Moderate	High.
16*:													
Dorovan----------	D	Frequent----	Very long	Jan-Dec	<0.5	Apparent	Jan-Dec	>60	---	---	75	High-----	High.
Pamlico----------	D	Frequent----	Very long	Nov-Jun	+1-1.0	Apparent	Nov-Jul	>60	---	4-12	10-36	High-----	High.
17, 18, 19-------- Dothan	B	None---------	---	---	3.5-4.0	Perched	Jan-Apr	>60	---	---	---	Moderate	Moderate.
20, 21------------ Duplin	C	None---------	---	---	2.0-3.5	Apparent	Dec-Apr	>60	---	---	---	High-----	High.
22, 23------------ Esto	B	None---------	---	---	>6.0	---	---	>60	---	---	---	High-----	High.
24, 25, 26-------- Faceville	B	None---------	---	---	>6.0	---	---	>60	---	---	---	Low------	Moderate.
27*:													
Faceville--------	B	None---------	---	---	>6.0	---	---	>60	---	---	---	Low------	Moderate.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard-ness	Ini-tial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
27*:													
Esto	B	None	---	---	>6.0	---	---	>60	---	---	---	High	High.
28, 29 Foxworth	A	None	---	---	3.5-6.0	Apparent	Jun-Oct	>60	---	---	---	Low	High.
30, 31 Fuquay	B	None	---	---	2.5-4.0	Perched	Jan-Mar	>60	---	---	---	Low	High.
32* Grady	D	None	---	---	+2-1.0	Apparent	Dec-Jun	>60	---	---	---	High	High.
33, 34 Greenville	B	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	High.
35, 36 Hornsville	C	None	---	---	2.5-3.5	Apparent	Dec-Apr	>60	---	---	---	High	High.
37* Iuka	C	Common	Brief	Dec-Apr	1.0-3.0	Apparent	Dec-Apr	>60	---	---	---	Moderate	High.
38, 39, 40, 41 Lakeland	A	None	---	---	>6.0	---	---	>72	---	---	---	Low	Moderate.
42 Leefield	C	None	---	---	1.5-2.5	Apparent	Dec-Mar	>60	---	---	---	Moderate	High.
43*, 44* Oktibbeha variant	D	None	---	---	>6.0	---	---	20-50	Rip-pable	---	---	High	High.
45, 46, 47 Orangeburg	B	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	Moderate.
48*:													
Pamlico	D	Frequent	Very long	Nov-Jun	+1-1.0	Apparent	Nov-Jul	>60	---	4-12	10-36	High	High.
Pantego	D	None to rare	Very brief	Nov-Feb	0-1.5	Apparent	Nov-Apr	>60	---	---	---	High	High.
Rutlege	D	Common	Brief	Dec-May	0-1.0	Apparent	Dec-May	>60	---	---	---	High	High.
49 Pansey	D	Common	Brief	Dec-Mar	0-1.5	Apparent	Dec-Mar	>60	---	---	---	High	Moderate.
50*. Pits													
51 Plummer	B/D	Occasional	Very brief	Dec-Mar	0-1.5	Apparent	Dec-Apr	>60	---	---	---	Moderate	High.
52 Plummer	B/D	None	---	---	+2-1.0	Apparent	Jul-May	>60	---	---	---	Moderate	High.
53, 54, 55 Red Bay	B	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	Moderate.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hard-ness	Ini-tial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
56----------------- Rutlege	D	Common-------	Brief------	Dec-May	0-1.0	Apparent	Dec-May	>60	---	---	---	High------	High.
57, 58------------- Tifton	B	None---------	---	---	>6.0	---	---	>60	---	---	---	Low-------	Moderate.
59, 60, 61--------- Troup	A	None---------	---	---	>6.0	---	---	>60	---	---	---	Low-------	Moderate.
62*. Urban land													
63*:													
Wicksburg---------	B	None---------	---	---	>6.0	---	---	>60	---	---	---	High------	High.
Esto--------------	B	None---------	---	---	>6.0	---	---	>60	---	---	---	High------	High.
64*:													
Yonges------------	D	Common-------	Long-------	Nov-Mar	0-1.0	Apparent	Nov-Apr	>60	---	---	---	High------	Moderate.
Herod-------------	D	Frequent-----	Brief------	Nov-Apr	0.5-1.5	Apparent	Dec-Mar	>60	---	---	---	High------	Moderate.

* See mapping unit description for the composition and behavior of the mapping unit.

TABLE 17.--PHYSICAL PROPERTIES OF SELECTED SOILS

Soil series and sample number	Depth	Horizon	Particle size distribution: Sand: Very coarse (2-1 mm)	Sand: Coarse (1-0.5mm)	Sand: Medium (0.5-0.25 mm)	Sand: Fine (0.25-0.1mm)	Sand: Very fine (0.1-0.05mm)	Sand: Total (2-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)	Hydraulic conductivity	Bulk density (field moist)	Water content: 1/10 bar	Water content: 1/3 bar	Water content: 15 bar
	In										Cm/hr	G/cc	Pct	Pct	Pct
Albany:															
S32-38-1----------	0-8	A1	3.1	14.0	29.8	31.5	11.9	91.2	6.2	2.6	28.9	1.45	7.6	4.4	1.9
S32-38-2----------	8-26	A21	2.8	15.1	31.2	32.6	9.1	90.8	6.9	2.3	51.2	1.42	7.1	4.3	1.4
S32-38-3----------	26-46	A22	2.4	14.2	28.8	34.2	11.5	91.1	7.4	1.4	34.5	1.55	5.8	2.8	0.8
S32-38-4----------	46-67	B21t	1.5	9.9	22.3	31.3	13.1	78.1	6.7	15.2	3.1	1.66	12.8	10.1	6.4
S32-38-5----------	67-80	B22t	1.9	8.1	18.6	32.1	13.5	73.3	4.3	22.4	---	1.76	16.5	13.6	10.1
Apalachee:															
S32-35-1----------	0-10	A	0.0	0.1	0.3	1.1	1.1	2.6	31.2	66.2	0.5	1.22	37.3	35.4	30.4
S32-35-2----------	10-18	A	0.0	0.0	0.3	1.1	1.0	2.4	29.9	67.7	2.6	1.18	39.5	37.8	31.4
S32-35-3----------	18-25	B21	0.0	0.1	1.0	1.5	1.5	4.1	31.7	64.2	2.2	1.08	48.7	46.6	33.5
S32-35-4----------	25-46	B22g	0.0	0.2	0.7	1.9	2.9	8.1	28.9	63.0	<0.1	1.23	42.7	39.9	30.5
S32-35-5----------	46-66	B22g	0.0	0.1	0.7	1.9	4.3	7.0	37.5	55.5	---	1.36	33.8	32.4	20.1
Blanton:															
S32-41-1----------	0-8	Ap	3.5	21.6	34.2	23.6	7.9	91.7	6.0	2.3	66.4	1.23	17.4	15.1	1.3
S32-41-2----------	8-15	A21	4.0	24.5	32.7	20.9	6.6	88.7	8.5	2.8	60.5	1.36	8.7	5.8	1.6
S32-41-3----------	15-41	A22	5.1	24.2	32.1	21.2	6.4	89.0	8.1	2.9	42.1	1.47	6.7	4.6	1.4
S32-41-4----------	41-63	A23	5.0	20.4	30.4	25.8	8.8	90.4	7.9	1.8	7.9	1.63	8.3	5.4	1.8
S32-41-5----------	63-67	B1	6.2	21.0	27.0	23.2	8.0	85.4	8.7	6.0	29.6	1.58	7.2	3.8	0.4
S32-41-6----------	67-80	B2t	4.5	15.8	22.9	22.0	7.8	73.0	7.8	19.2	4.3	1.69	11.9	9.9	6.1
Chipola:															
S32-12-1----------	0-10	Ap	4.9	19.0	27.1	22.7	10.1	83.8	8.6	7.6	11.0	1.65	9.1	6.4	3.1
S32-12-2----------	10-22	A21	7.6	19.1	28.5	23.3	8.3	86.8	5.9	7.3	22.9	1.57	6.9	4.9	2.5
S32-12-3----------	22-32	A22	7.6	20.0	28.0	24.3	8.1	88.0	5.4	6.6	10.1	1.69	7.0	4.4	2.2
S32-12-4----------	32-35	A23	11.7	22.0	25.4	21.6	7.1	87.8	5.0	7.2	---	---	---	---	---
S32-12-5----------	35-56	B2t	6.4	18.6	26.4	21.3	7.4	80.1	4.7	15.2	13.6	1.68	9.6	7.6	5.2
S32-12-6----------	56-75	B3	7.7	20.8	28.3	20.9	6.9	84.6	4.0	11.4	24.5	1.65	6.8	5.3	3.5
S32-12-7----------	75-94	C	14.9	26.0	29.0	15.6	4.1	89.6	2.9	7.5	32.2	1.62	10.4	7.3	1.9
Clarendon:															
S32-4-1-----------	0-8	Ap	1.0	7.5	16.2	25.2	20.7	70.6	14.0	15.4	---	---	---	---	---
S32-4-2-----------	8-16	A2	1.2	8.0	15.4	22.2	19.0	65.8	20.9	13.3	---	---	---	---	---
S32-4-3-----------	16-21	B21t	1.0	6.6	13.4	19.0	16.9	56.9	13.7	29.4	---	---	---	---	---
S32-4-4-----------	21-26	B22t	1.1	7.1	14.6	19.7	15.5	58.0	13.9	29.7	---	---	---	---	---
S32-4-5-----------	26-52	B23t	1.3	9.5	18.0	18.1	13.2	60.1	9.3	30.6	---	---	---	---	---
S32-4-6-----------	52-84	B3g	1.3	9.6	18.3	22.4	16.7	68.3	9.3	22.4	---	---	---	---	---
Compass:															
S32-17-1----------	0-8	A1	6.3	16.2	17.7	24.3	14.5	79.0	13.6	7.4	---	---	---	---	---
S32-17-2----------	8-16	B1	8.4	15.2	16.8	23.8	15.6	79.8	11.4	8.8	3.8	1.54	11.9	7.6	3.0
S32-17-3----------	16-22	B21t	3.6	12.5	17.7	28.6	15.5	77.9	13.4	8.7	9.1	1.59	10.2	6.8	3.6
S32-17-4----------	22-33	B22t	8.0	14.0	14.4	22.9	14.7	74.0	9.7	16.3	4.2	1.64	13.4	9.8	5.8
S32-17-5----------	33-40	B23t	6.7	14.2	14.3	20.6	13.8	69.6	8.0	22.4	1.1	1.71	16.1	13.2	8.5
S32-17-6----------	40-57	B24t	10.1	16.6	15.4	17.8	11.5	71.4	5.9	22.7	---	1.69	17.4	14.3	9.3
S32-17-7----------	57-64	IIB25t	2.7	10.4	12.0	15.3	11.8	52.2	6.0	41.8	<0.1	1.70	17.3	15.2	13.0
S32-17-8----------	64-74	IIB26t	1.8	6.4	7.8	13.7	11.8	41.5	8.5	50.0	<0.1	1.71	18.4	16.0	11.9

TABLE 17.--PHYSICAL PROPERTIES OF SELECTED SOILS--Continued

Soil series and sample number	Depth	Horizon	Particle size distribution: Sand: Very coarse (2-1 mm)	Coarse (1-0.5mm)	Medium (0.5-0.25 mm)	Fine (0.25-0.1mm)	Very fine (0.1-0.05mm)	Total (2-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)	Hydraulic conductivity	Bulk density (field moist)	Water content: 1/10 bar	1/3 bar	15 bar
	In										Cm/hr	G/cc	Pct	Pct	Pct
Dothan:															
S32-5-1----------	0-5	Ap	0.2	6.7	21.8	37.4	19.3	85.4	6.9	7.7	---	---	---	---	---
S32-5-2----------	5-10	B21t	0.8	6.5	17.2	30.4	16.6	71.5	8.4	20.5	---	---	---	---	---
S32-5-3----------	10-34	B22t	1.2	6.4	14.3	25.8	14.6	62.3	4.5	33.2	---	---	---	---	---
S32-5-4----------	34-54	B23t	1.0	6.8	16.5	29.4	16.2	69.9	6.7	23.4	---	---	---	---	---
S32-5-5----------	54-76	B24t	1.0	7.2	19.6	32.0	15.5	75.3	5.1	19.6	---	---	---	---	---
Duplin:															
S32-31-1---------	0-9	Ap	0.9	5.4	14.3	27.2	22.4	70.2	17.8	12.0	0.2	1.70	14.6	11.2	5.5
S32-31-2---------	9-17	B1t	1.3	4.7	11.9	25.0	19.4	62.3	13.3	24.4	1.5	1.52	18.7	15.5	9.4
S32-31-3---------	17-23	B21t	0.6	3.3	9.0	18.8	12.8	44.5	10.3	45.2	0.1	1.58	25.0	23.6	18.5
S32-31-4---------	23-46	B22t	0.5	3.5	9.0	16.8	12.5	42.3	6.5	51.2	0.1	1.54	27.5	26.1	20.0
S32-31-5---------	46-64	B23tg	0.9	3.3	7.5	16.0	12.0	39.7	9.1	51.2	<0.1	1.48	29.9	27.8	21.2
Esto:															
S32-24-1---------	0-3	A1	2.1	10.7	21.0	30.9	15.5	80.2	12.7	7.1	44.7	1.25	13.2	8.8	3.9
S32-24-2---------	3-12	A2	2.1	9.9	21.4	31.6	15.4	80.4	11.1	8.5	8.3	1.52	10.7	7.2	4.0
S32-24-3---------	12-18	B1t	1.7	8.2	17.0	23.9	12.5	63.3	10.3	26.4	2.1	1.48	22.3	20.4	16.5
S32-24-4---------	18-36	B21t	0.3	1.8	3.8	22.5	17.5	45.9	8.6	45.5	0.9	1.46	25.5	23.8	20.0
S32-24-5---------	36-43	B22t	1.0	5.0	7.5	19.4	14.6	47.5	8.9	43.6	0.2	1.55	23.2	21.6	18.9
S32-24-6---------	43-58	B22t	0.8	5.1	6.5	16.9	13.6	42.9	10.1	47.0	<0.1	1.56	25.0	23.9	21.6
S32-24-7---------	58-73	B23t	0.5	3.7	8.1	22.4	11.7	46.0	7.4	46.6	<0.1	1.53	29.3	24.9	22.5
S32-24-8---------	73-81	B23t	0.7	6.3	11.9	22.8	12.5	54.2	9.6	36.2	---	---	---	---	---
Faceville:															
S32-29-1---------	0-5	Ap	3.1	7.5	12.5	37.8	24.9	85.8	8.3	5.9	---	1.66	12.6	8.9	3.2
S32-29-2---------	5-20	B21t	1.5	4.3	8.0	25.7	17.1	56.6	6.0	37.4	---	1.56	26.3	24.0	17.6
S32-29-3---------	20-30	B22t	1.2	3.1	7.1	23.3	17.1	51.8	9.6	38.6	---	1.56	27.1	24.5	17.5
S32-29-4---------	30-46	B23t	0.2	0.1	5.9	27.8	17.5	52.4	5.6	42.0	---	1.64	25.1	24.8	17.6
S32-29-5---------	46-61	B24t	0.5	1.8	6.0	19.3	11.9	39.5	7.0	53.5	---	1.28	40.5	38.8	29.3
S32-29-6---------	61-70	IIC	1.8	9.3	14.9	40.1	12.1	78.2	3.0	18.8	---	1.83	14.0	11.5	8.2
Fuquay:															
S32-22-1---------	0-6	A1	4.8	21.1	27.1	25.5	9.7	88.2	7.8	4.0	55.2	1.50	6.5	4.4	2.3
S32-22-2---------	6-12	A21	6.2	23.5	27.1	22.2	7.9	86.9	7.4	5.7	23.6	1.62	12.0	8.7	2.8
S32-22-3---------	12-26	A22	5.3	19.9	25.2	24.9	9.3	84.6	7.6	7.8	40.4	1.57	7.5	5.6	2.8
S32-22-4---------	26-32	A22	5.3	20.0	24.4	25.1	9.7	84.6	7.6	7.8	25.3	1.69	8.0	5.8	3.1
S32-22-5---------	32-44	B1	6.7	21.1	24.2	20.6	8.2	80.8	6.4	12.8	11.8	1.73	10.1	8.2	3.6
S32-22-6---------	44-55	B21t	4.5	18.2	22.1	19.0	7.6	71.4	5.2	23.4	8.3	1.63	10.8	7.6	4.0
S32-22-7---------	55-71	B22t	5.1	18.7	21.2	17.5	7.0	69.5	4.6	25.9	3.5	1.68	17.1	16.3	11.3
S32-22-8---------	71-80	B22t	6.1	16.4	18.1	16.2	7.0	63.8	5.2	31.0	3.0	1.63	16.1	14.7	9.3
Greenville:															
S32-9-1----------	0-8	Ap	1.0	4.3	12.0	33.6	20.0	70.9	10.7	18.4	---	---	---	---	---
S32-9-2----------	8-22	B21t	1.0	3.6	8.9	23.2	14.7	51.4	6.9	41.7	---	---	---	---	---
S32-9-3----------	22-38	B21t	0.9	3.4	9.3	23.5	14.9	52.0	5.9	42.1	---	---	---	---	---
S32-9-4----------	38-52	B21t	1.3	4.4	10.2	25.4	15.8	53.9	5.4	37.5	---	---	---	---	---
S32-9-5----------	52-72	B22t	1.1	3.4	9.6	26.2	16.4	56.7	2.6	40.7	---	---	---	---	---

TABLE 17.--PHYSICAL PROPERTIES OF SELECTED SOILS--Continued

Soil series and sample number	Depth	Horizon	Particle size distribution: Sand: Very coarse (2-1 mm)	Sand: Coarse (1-0.5mm)	Sand: Medium (0.5-0.25 mm)	Sand: Fine (0.25-0.1mm)	Sand: Very fine (0.1-0.05mm)	Sand: Total (2-0.05 mm)	Silt (0.05-0.002 mm)	Clay (<0.002 mm)	Hydraulic conductivity	Bulk density (field moist)	Water content: 1/10 bar	Water content: 1/3 bar	Water content: 15 bar
	In										Cm/hr	G/cc	Pct	Pct	Pct
Hornsville:															
S32-32-1----------	0-4	A1	0.3	3.5	12.1	37.2	18.0	71.1	21.0	7.9	3.4	1.35	23.3	17.3	6.0
S32-32-2----------	4-9	A2	0.5	4.3	13.6	36.7	14.9	70.0	20.6	9.4	0.6	1.53	14.7	11.1	5.0
S32-32-3----------	9-19	B21t	0.2	2.3	11.9	25.9	5.6	45.9	7.8	46.3	<0.1	1.55	26.5	25.5	20.3
S32-32-4----------	19-31	B22t	0.1	1.2	13.7	45.8	3.8	64.6	3.6	31.7	0.2	1.58	18.1	15.9	11.2
S32-32-5----------	31-43	B23t	0.1	0.5	2.5	34.2	16.1	53.4	7.9	38.6	<0.1	1.67	19.5	17.5	11.0
S32-32-6----------	43-59	B3	0.0	0.4	3.8	62.4	9.5	76.1	4.5	19.4	0.8	1.64	17.0	13.7	8.1
S32-32-7----------	59-76	B3	0.5	11.7	30.4	36.5	4.0	83.1	1.5	15.4	0.8	1.64	16.6	12.4	9.2
Lakeland:															
S32-19-1----------	0-5	Ap	1.9	13.6	56.5	18.2	2.6	92.8	4.1	3.1	---	---	---	---	---
S32-19-2----------	5-8	C1	1.7	13.4	56.3	18.8	2.5	92.7	3.9	3.4	---	---	---	---	---
S32-19-3----------	8-20	C2	2.1	14.0	57.1	18.0	2.2	93.4	3.5	3.1	43.7	1.57	4.2	3.0	1.3
S32-19-4----------	20-40	C2	3.2	15.1	56.0	17.6	1.9	93.8	2.6	3.6	47.3	1.59	3.7	2.7	1.2
S32-19-5----------	40-82	C3	3.0	15.0	56.4	19.8	2.3	96.5	1.2	2.3	60.8	1.56	2.6	1.8	0.7
Leefield:															
S32-40-1----------	0-9	Ap	0.6	7.5	22.0	32.9	16.8	83.0	12.0	5.0	63.1	1.32	22.8	16.9	5.1
S32-40-2----------	9-14	A21	0.9	7.0	21.3	36.3	15.4	80.9	12.3	6.8	3.0	1.64	12.4	8.7	3.3
S32-40-3----------	14-22	A21	0.9	6.7	20.6	36.0	15.4	79.6	12.2	8.2	5.3	1.68	11.4	8.1	3.6
S32-40-4----------	22-28	A22	1.0	7.2	20.9	37.0	13.7	79.8	11.4	8.8	3.0	1.78	11.3	8.4	3.8
S32-40-5----------	28-43	B21t	1.4	7.3	19.5	30.4	14.5	73.1	11.8	15.2	0.9	1.79	14.5	12.2	5.9
S32-40-6----------	43-64	B22t	1.1	7.4	20.3	26.8	11.0	66.7	10.5	22.9	0.3	1.58	21.7	19.6	12.6
S32-40-7----------	64-84	B22t	0.9	7.2	20.7	26.3	10.3	65.4	10.4	24.2	---	1.67	19.0	17.0	11.8
Orangeburg:															
S32-11-1----------	0-9	Ap	2.9	19.5	35.5	26.7	1.6	86.2	8.3	5.5	---	---	---	---	---
S32-11-2----------	9-17	B21t	3.3	15.8	26.2	22.7	2.8	70.8	8.0	21.2	---	---	---	---	---
S32-11-3----------	17-32	B22t	3.7	13.7	22.0	18.3	7.1	64.8	5.8	29.4	---	---	---	---	---
S32-11-4----------	32-48	B22t	3.3	15.0	24.2	19.5	7.5	69.5	4.0	26.5	---	---	---	---	---
S32-11-5----------	48-61	B23t	3.9	21.2	33.7	11.6	0.7	71.1	1.1	27.8	---	---	---	---	---
S32-11-6----------	61-72	B23t	3.7	17.0	28.8	19.2	3.7	72.4	3.5	24.1	---	---	---	---	---
Red Bay:															
S32-26-1----------	0-9	Ap	0.7	7.1	19.9	30.9	17.7	76.3	9.9	13.8	4.4	1.63	11.7	8.4	4.3
S32-26-2----------	9-16	B21t	0.9	8.5	17.7	22.2	11.5	60.8	7.7	31.5	2.7	1.62	17.0	14.4	9.7
S32-26-3----------	16-32	B22t	1.4	8.6	16.9	18.5	10.4	56.8	7.2	36.0	2.2	1.63	18.6	16.4	12.1
S32-26-4----------	32-49	B22t	1.4	8.9	17.5	21.1	11.0	59.9	5.9	34.2	1.5	1.64	17.6	15.4	10.8
S32-26-5----------	49-62	B23t	1.7	8.5	17.3	22.6	11.9	62.0	5.8	32.2	1.6	1.75	17.2	15.4	11.2
S32-26-6----------	62-76	B23t	2.5	9.8	19.1	21.8	11.1	64.3	5.9	29.8	---	1.76	16.6	14.9	11.1
Troup:															
S32-20-1----------	0-5	Ap	1.5	11.2	46.6	29.3	3.6	92.1	4.7	3.2	---	---	---	---	---
S32-20-2----------	5-25	A21	1.5	11.1	47.2	29.7	3.7	93.1	3.6	3.2	54.6	1.56	3.9	2.9	1.3
S32-20-3----------	25-47	A22	2.4	15.1	48.8	25.6	2.6	94.5	2.0	3.5	46.3	1.60	3.8	2.8	1.6
S32-20-4----------	47-57	A23	1.9	13.7	49.2	26.5	2.5	93.8	2.4	3.8	49.7	1.60	3.6	2.6	1.5
S32-20-5----------	57-75	B2t	2.9	14.6	40.6	23.7	2.2	83.8	0.9	15.3	30.5	1.56	9.4	8.0	6.0

TABLE 18.--CHEMICAL PROPERTIES OF SELECTED SOILS

Soil series and sample number	Depth	Horizon	Extractable bases (meq per 100 grams)					Meq per 100 grams of--		Percentage of--		Electrical conductivity	pH			Extractable citrate dithionite	
			Ca	Mg	Na	K	Sum	Extractable acidity	Sum cations	Base saturation	Organic carbon		H_2O (1:1)	$CaCl_2$ .01M (1:2)	KCl 1N (1:1)	Al	Fe
	In											Mmho/cm				Pct	Pct
Albany:																	
S32-38-1---	0-8	A1	0.26	0.04	0.02	0.01	0.33	5.30	5.63	6	0.15	0.15	5.2	4.8	4.4	0.08	0.10
S32-38-2---	8-26	A21	0.16	0.05	0.02	0.01	0.24	2.79	3.03	8	0.28	0.17	5.7	5.3	4.7	0.08	0.08
S32-38-3---	26-46	A22	0.03	0.01	0.02	0.00	0.06	1.24	1.30	5	0.10	0.18	6.1	5.9	4.8	0.06	0.06
S32-38-4---	46-67	B21t	0.48	0.26	0.02	0.02	0.78	4.14	4.92	16	0.05	0.11	4.9	4.3	4.0	0.08	0.19
S32-38-5---	67-80	B22t	0.21	0.20	0.03	0.03	0.47	7.38	7.85	6	0.05	0.10	4.7	4.1	3.9	0.07	0.08
Apalachee:																	
S32-35-1---	0-10	A	8.50	1.13	0.13	0.25	10.01	18.53	28.54	35	1.65	0.13	5.2	4.5	3.9	0.54	3.25
S32-35-2---	10-18	A	7.45	1.33	0.14	0.12	9.04	19.11	28.15	32	1.05	0.10	5.2	4.3	3.8	0.52	3.10
S32-35-3---	18-25	B21	12.28	2.76	0.23	0.20	15.47	22.23	37.70	41	1.08	0.16	5.1	4.2	3.6	0.33	2.11
S32-35-4---	25-46	B22g	13.30	3.21	0.19	0.19	16.89	20.28	37.17	45	0.71	0.17	5.2	4.3	3.5	0.28	1.72
S32-35-5---	46-66	B22g	12.15	3.29	0.18	0.21	15.83	19.11	34.94	45	0.50	0.18	5.2	4.4	3.6	0.28	1.78
Blanton:																	
S32-41-1---	0-8	Ap	0.12	0.04	0.02	0.02	0.20	1.73	1.93	10	0.38	0.03	5.3	4.7	4.3	---	---
S32-41-2---	8-15	A21	0.06	0.01	0.01	0.01	0.09	1.52	1.61	6	0.14	0.02	5.4	4.7	4.3	---	---
S32-41-3---	15-41	A22	0.11	0.03	0.01	0.01	0.16	1.24	1.40	11	0.06	0.02	5.4	5.0	4.4	---	---
S32-41-4---	41-63	A23	0.09	0.00	0.01	0.00	0.10	0.43	0.53	19	0.03	0.02	6.0	5.8	4.6	---	---
S32-41-5---	63-67	B1	0.26	0.05	0.01	0.01	0.33	0.90	1.23	27	0.05	0.02	5.4	4.8	4.2	---	---
S32-41-6---	67-80	B2t	0.30	0.09	0.01	0.02	0.42	3.77	4.19	10	0.06	0.02	5.3	4.3	4.0	0.18	0.83
Chipola:																	
S32-12-1---	0-10	Ap	0.40	0.10	tr*	tr	0.50	4.10	4.60	11	0.52	0.03	5.3	4.5	4.1	0.17	0.37
S32-12-2---	10-22	A21	0.40	tr	tr	tr	0.40	2.10	2.50	16	0.12	0.02	5.4	4.8	4.2	0.10	0.28
S32-12-3---	22-32	A22	0.40	tr	tr	tr	0.40	1.60	2.00	20	0.09	0.02	5.6	4.9	4.2	0.09	0.29
S32-12-4---	32-35	A23	0.40	tr	tr	tr	0.40	1.60	2.00	20	0.06	0.02	5.5	4.8	4.1	0.09	0.32
S32-12-5---	35-56	B2t	0.30	0.10	tr	tr	0.40	4.10	4.50	9	0.12	0.03	5.0	4.1	3.7	0.15	0.61
S32-12-6---	56-75	B3	0.40	tr	tr	tr	0.40	2.70	3.10	13	0.07	0.02	5.1	4.2	3.8	0.11	0.49
S32-12-7---	75-94	C	0.30	tr	tr	tr	0.30	1.40	1.70	18	0.03	0.02	5.1	4.2	3.8	0.08	0.85
Clarendon:																	
S32-4-1----	0-8	Ap	0.80	0.10	tr	0.10	1.00	1.00	2.00	50	1.10	0.15	5.7	5.6	6.4	0.20	0.40
S32-4-2----	8-16	A2	0.60	0.20	tr	0.10	0.90	3.10	4.00	23	0.20	0.14	4.2	4.1	4.8	0.20	0.50
S32-4-3----	16-21	B21t	0.40	0.10	tr	tr	0.50	3.90	4.40	11	0.10	0.09	4.1	3.9	4.6	0.20	0.90
S32-4-4----	21-26	B22t	0.40	0.10	tr	tr	0.50	3.10	3.60	14	0.10	0.08	4.1	3.9	4.7	0.20	0.70
S32-4-5----	26-52	B23t	0.30	0.10	tr	tr	0.40	4.40	4.80	8	0.04	0.04	4.0	3.9	5.0	0.20	1.00
S32-4-6----	52-84	B3g	0.20	0.10	tr	tr	0.30	3.30	3.60	8	0.04	0.03	3.9	3.8	5.1	0.10	0.40
Compass:																	
S32-17-1---	0-8	A1	0.60	0.20	tr	tr	0.80	7.50	8.30	10	1.44	0.08	4.7	4.1	3.7	0.13	0.30
S32-17-2---	8-16	B1	0.30	0.10	tr	tr	0.40	3.80	4.20	10	0.45	0.04	5.1	4.5	3.9	0.11	0.24
S32-17-3---	16-22	B21t	0.20	0.10	tr	tr	0.30	3.40	3.70	8	0.25	0.04	4.9	4.2	3.8	0.12	0.28
S32-17-4---	22-33	B22t	0.10	0.20	tr	tr	0.30	4.60	4.90	6	0.05	0.03	4.7	4.0	3.8	0.15	0.48
S32-17-5---	33-40	B23t	0.10	0.10	tr	tr	0.20	5.90	6.10	3	0.10	0.03	4.8	4.0	3.8	0.20	0.74
S32-17-6---	40-57	B24t	0.10	0.20	tr	tr	0.30	5.00	5.30	6	0.05	0.03	4.9	4.0	3.8	0.17	0.74
S32-17-7---	57-64	IIB25t	0.20	0.40	tr	tr	0.60	6.70	7.30	8	0.05	0.03	4.8	3.0	3.5	0.07	0.34
S32-17-8---	64-74	IIB26t	0.40	0.40	tr	0.10	0.90	7.50	8.40	11	0.03	0.03	4.8	3.9	3.5	0.12	0.76

See footnote at end of table.

TABLE 18.--CHEMICAL PROPERTIES OF SELECTED SOILS--Continued

Soil series and sample number	Depth	Horizon	Extractable bases (meq per 100 grams) Ca	Mg	Na	K	Sum	Meq per 100 grams of-- Extractable acidity	Sum cations	Percentage of-- Base saturation	Organic carbon	Electrical conductivity	pH H_2O (1:1)	$CaCl_2$ .01M (1:2)	KCl 1N (1:1)	Extractable citrate dithionite Al	Fe
	In											Mmho/cm				Pct	Pct
Dothan:																	
S32-5-1----	0-5	Ap	1.80	0.20	0	0.10	2.10	0.20	2.30	91	0.50	0.10	5.6	5.6	6.4	0.10	0.30
S32-5-2----	5-10	B21t	1.80	0.20	tr	0.10	2.10	0.70	2.80	75	0.10	0.10	5.6	5.6	6.4	0.20	0.70
S32-5-3----	10-34	B22t	1.40	0.20	0	0.10	1.70	2.10	3.80	45	0.10	0.10	4.6	4.3	5.3	0.40	1.50
S32-5-4----	34-54	B23t	0.90	0.20	0	tr	1.10	2.20	3.30	33	0.04	0.09	4.4	4.1	5.1	0.30	1.40
S32-5-5----	54-76	B24t	0.80	0.30	tr	tr	1.10	2.40	3.50	31	0.10	0.06	4.0	4.0	5.2	0.10	0.60
Duplin:																	
S32-31-1---	0-9	Ap	2.32	0.50	0.03	0.28	3.13	7.28	10.41	30	1.34	0.05	5.8	4.9	4.6	0.16	0.31
S32-31-2---	9-17	B1t	1.52	0.58	0.02	0.27	2.39	3.59	5.98	67	0.30	0.05	6.0	5.5	5.1	0.18	0.46
S32-31-3---	17-23	B21t	1.74	0.88	0.03	0.17	2.82	6.63	9.45	30	0.24	0.04	5.3	4.5	4.2	0.23	0.75
S32-31-4---	23-46	B22tg	0.86	0.47	0.03	0.04	1.40	7.62	9.02	16	0.04	0.03	4.9	4.2	3.9	0.19	0.83
S32-31-5---	46-64	B23tg	0.67	0.47	0.05	0.03	1.22	7.54	8.76	14	0.08	0.02	5.1	4.3	4.1	0.58	6.87
Esto:																	
S32-24-1---	0-3	A1	0.80	0.20	tr	tr	1.00	4.40	5.40	18	0.94	0.05	5.3	4.2	4.0	0.10	0.17
S32-24-2---	3-12	A2	0.40	0.20	tr	tr	0.60	3.10	3.70	16	0.46	0.03	5.4	4.4	4.1	0.10	0.16
S32-24-3---	12-18	B1t	0.30	0.40	tr	tr	0.70	4.00	4.70	15	0.29	0.04	4.8	3.9	3.6	0.10	0.31
S32-24-4---	18-36	B21t	0.20	0.30	tr	tr	0.50	6.60	7.10	7	0.09	0.04	5.0	3.8	3.5	0.11	0.34
S32-24-5---	36-43	B22t	tr	0.10	tr	tr	0.10	6.00	6.10	2	0.06	0.03	4.9	3.7	3.5	0.10	0.26
S32-24-6---	43-58	B22t	tr	0.10	0.10	tr	0.20	6.20	6.40	3	0.05	0.03	4.8	3.7	3.4	0.09	0.30
S32-24-7---	58-73	B23t	tr	tr	tr	tr	tr	6.20	6.20	---	0.11	0.03	4.9	3.7	3.4	0.08	0.16
S32-24-8---	73-81	B23t	tr	tr	tr	tr	tr	5.00	5.00	---	0.11	0.02	4.7	3.8	3.5	0.07	0.12
Faceville:																	
S32-29-1---	0-5	Ap	0.90	0.26	0.02	0.04	1.22	4.42	5.64	22	0.72	0.05	5.5	4.7	4.4	0.14	1.63
S32-29-2---	5-20	B21t	1.17	0.69	0.03	0.05	1.94	7.80	9.74	20	0.34	0.03	5.2	4.2	4.0	0.32	2.60
S32-29-3---	20-30	B22t	0.12	0.57	0.02	0.08	0.79	9.58	10.37	8	0.09	0.02	5.2	4.1	3.9	0.28	1.73
S32-29-4---	30-46	B23t	0.02	0.21	0.02	0.01	0.26	12.90	13.16	2	0.06	0.03	4.9	3.8	3.7	0.16	0.60
S32-29-5---	46-61	B24t	0.03	0.84	0.06	0.33	1.26	19.53	20.79	6	0.06	0.04	4.9	3.8	3.5	0.18	0.37
S32-29-6---	61-70	IIC	0.03	0.68	0.04	0.21	0.96	4.69	5.65	17	0.04	0.01	5.1	4.0	3.8	0.06	1.34
Fuquay:																	
S32-22-1---	0-6	A1	0.60	0.10	tr	tr	0.70	2.80	3.50	20	0.58	0.03	5.7	4.7	4.2	0.14	0.27
S32-22-2---	6-12	A21	0.40	0.10	tr	tr	0.50	2.10	2.60	19	0.26	0.03	5.5	4.5	4.1	0.18	0.37
S32-22-3---	12-26	A22	0.20	0.10	tr	tr	0.30	1.70	2.00	15	0.12	0.02	5.3	4.2	4.0	0.12	0.31
S32-22-4---	26-32	A22	0.30	0.10	tr	tr	0.40	1.90	2.30	17	0.08	0.02	5.3	4.2	3.9	0.11	0.33
S32-22-5---	32-44	B1	0.60	0.20	tr	tr	0.80	2.00	2.80	29	0.07	0.02	5.4	4.3	4.0	0.15	0.54
S32-22-6---	44-55	B21t	0.90	0.40	tr	tr	1.30	3.10	4.40	30	0.08	0.02	5.3	4.2	3.9	0.22	0.87
S32-22-7---	55-71	B22t	0.50	0.40	tr	tr	0.90	3.60	4.50	20	0.06	0.02	5.2	4.0	3.8	0.19	0.79
S32-22-8---	71-80	B22t	0.20	0.30	tr	tr	0.50	4.80	5.30	9	0.03	0.02	5.2	3.9	3.7	0.20	0.85
Greenville:																	
S32-9-1----	0-8	Ap	2.40	0.50	tr	0.20	3.10	6.60	9.70	32	0.88	---	5.4	5.2	5.4	---	---
S32-9-2----	8-22	B21t	2.90	0.60	tr	tr	3.50	6.60	10.10	35	0.22	0.13	5.5	5.3	5.3	0.39	3.39
S32-9-3----	22-38	B21t	0.90	0.40	tr	tr	1.30	8.60	9.90	13	0.09	---	4.5	4.5	5.2	---	---
S32-9-4----	38-52	B21t	0.80	0.30	tr	tr	1.10	7.60	8.70	13	0.10	0.03	4.3	4.4	5.2	0.38	3.75
S32-9-5----	52-72	B22t	0.60	0.40	tr	tr	1.00	7.20	8.20	12	0.04	0.03	4.2	4.2	5.2	0.38	3.67

See footnote at end of table.

TABLE 18.--CHEMICAL PROPERTIES OF SELECTED SOILS--Continued

Soil series and sample number	Depth	Horizon	Extractable bases (meq per 100 grams) Ca	Mg	Na	K	Sum	Meq per 100 grams of-- Extractable acidity	Sum cations	Percentage of-- Base saturation	Organic carbon	Electrical conductivity	pH H_2O (1:1)	$CaCl_2$ .01M (1:2)	KCl 1N (1:1)	Extractable citrate dithionite Al	Fe
	In											Mmho/cm				Pct	Pct
Hornsville:																	
S32-32-1---	0-4	A1	3.18	0.46	0.05	0.21	3.90	8.84	12.74	31	1.78	0.07	5.6	4.9	4.7	0.12	0.38
S32-32-2---	4-9	A2	0.82	0.23	0.03	0.06	1.14	5.46	6.60	17	0.68	0.04	5.6	4.8	4.3	0.12	0.36
S32-32-3---	9-19	B21t	0.90	1.25	0.05	0.20	2.40	10.36	12.76	19	0.28	0.03	5.2	4.1	3.8	0.34	1.62
S32-32-4---	19-31	B22t	0.32	0.62	0.05	0.09	1.08	8.21	9.29	12	0.05	0.02	5.4	4.2	3.9	0.19	0.91
S32-32-5---	31-43	B23t	0.26	0.71	0.05	0.07	1.09	11.73	12.82	9	0.06	0.02	5.2	4.0	3.7	0.26	1.33
S32-32-6---	43-59	B3	0.11	0.32	0.03	0.03	0.49	6.84	7.33	7	0.04	0.02	5.2	4.0	3.8	0.16	0.86
S32-32-7---	59-76	B3	0.08	0.22	0.02	0.03	0.35	4.30	4.65	8	0.02	0.02	5.2	4.0	3.8	0.11	0.51
Lakeland:																	
S32-19-1---	0-5	Ap	0.05	0.10	tr	tr	0.60	2.80	3.40	18	0.55	0.02	5.6	5.0	4.5	0.10	0.26
S32-19-2---	5-8	C1	0.30	0.10	tr	tr	0.40	2.40	2.80	14	0.28	0.03	5.8	5.4	4.7	0.12	0.26
S32-19-3---	8-20	C2	tr	tr	tr	tr	tr	1.70	1.70	---	0.08	0.03	5.1	4.7	4.1	0.13	0.24
S32-19-4---	20-40	C2	tr	tr	tr	tr	tr	0.90	0.90	---	0.04	0.03	5.0	4.7	4.2	0.10	0.27
S32-19-5---	40-82	C3	tr	tr	tr	tr	tr	0.40	0.40	---	0.03	0.02	5.6	5.4	4.4	0.08	0.17
Leefield:																	
S32-40-1---	0-9	Ap	4.70	0.16	0.12	0.04	5.02	8.63	13.65	37	2.14	0.16	5.8	5.4	5.1	0.16	0.21
S32-40-2---	9-14	A21	0.33	0.11	0.03	0.01	0.48	5.42	5.90	8	0.57	0.06	5.1	4.6	4.3	0.11	0.17
S32-40-3---	14-22	A21	0.11	0.11	0.03	0.01	0.26	3.02	3.28	8	0.20	0.06	4.7	4.3	4.1	0.10	0.24
S32-40-4---	22-28	A22	0.04	0.01	0.02	0.01	0.08	2.68	2.76	3	0.06	0.04	4.7	4.2	4.0	0.09	0.25
S32-40-5---	28-43	B21t	0.05	0.03	0.03	0.01	0.12	3.82	3.94	3	0.04	0.03	4.9	4.1	3.8	0.12	0.70
S32-40-6---	43-64	B22t	0.16	0.07	0.04	0.01	0.28	5.46	5.74	5	0.05	0.03	4.7	4.2	3.9	0.36	2.70
S32-40-7---	64-84	B22t	0.47	0.12	0.04	0.02	0.65	5.25	5.90	11	0.04	0.02	4.9	4.2	3.9	0.45	6.03
Orangeburg:																	
S32-11-1---	0-9	Ap	2.30	1.30	tr	tr	3.60	2.00	5.60	64	0.36	0.08	6.1	5.4	6.3	0.10	0.28
S32-11-2---	9-17	B21t	0.90	0.30	tr	0.10	1.30	4.00	5.30	25	0.16	0.09	4.7	4.8	5.5	0.22	0.90
S32-11-3---	17-32	B22t	1.10	0.50	tr	tr	1.60	4.80	6.40	25	0.15	0.05	4.7	4.7	5.5	0.28	1.41
S32-11-4---	32-48	B22t	0.80	0.50	tr	tr	1.30	5.40	6.70	19	0.09	0.04	4.5	4.5	5.2	0.26	1.28
S32-11-5---	48-61	B23t	1.00	0.40	tr	tr	1.40	3.00	4.40	32	0.02	0.05	4.4	4.4	5.2	0.15	0.79
S32-11-6---	61-72	B23t	0.70	0.30	tr	tr	1.00	3.00	4.00	25	0.03	---	4.4	4.5	5.2	---	---
Red Bay:																	
S32-26-1---	0-9	Ap	0.50	0.20	tr	0.10	0.60	5.30	5.90	10	0.51	0.04	5.5	4.6	4.1	0.16	0.81
S32-26-2---	9-16	B21t	1.40	0.40	tr	0.10	1.90	5.40	7.30	26	0.22	0.04	5.7	5.1	4.4	0.22	1.76
S32-26-3---	16-32	B22t	1.70	0.50	tr	0.10	2.30	5.50	7.80	29	0.12	0.03	5.9	5.4	4.8	0.23	2.07
S32-26-4---	32-49	B22t	0.30	0.60	tr	tr	0.90	4.90	5.80	16	0.06	0.02	5.5	4.4	4.1	0.24	2.02
S32-26-5---	49-62	B23t	0.20	0.40	tr	tr	0.60	5.00	5.60	11	0.02	0.02	5.4	4.4	4.0	0.23	1.97
S32-26-6---	62-76	B23t	0.20	0.40	tr	tr	0.60	4.40	5.00	12	0.02	0.02	5.3	4.3	4.0	0.28	2.36
Troup:																	
S32-20-1---	0-5	Ap	0.80	0.30	tr	tr	1.10	2.20	3.30	33	0.64	0.04	5.8	5.4	4.9	0.10	0.26
S32-20-2---	5-25	A21	0.30	0.10	tr	tr	0.30	1.20	1.50	20	0.19	0.03	5.9	5.6	4.7	0.10	0.25
S32-20-3---	25-47	A22	tr	tr	tr	tr	tr	0.90	0.90	---	0.05	0.02	5.4	5.2	4.3	0.10	0.25
S32-20-4---	47-57	A23	tr	tr	tr	tr	tr	1.30	1.30	---	0.04	0.04	5.1	4.6	4.2	0.18	0.30
S32-20-5---	57-75	B2t	0.10	0.20	tr	tr	0.30	3.10	3.40	9	0.10	0.03	5.2	4.8	4.4	0.33	1.11

* Trace

TABLE 19.--CLAY MINERALOGY OF SELECTED SOILS

Soil series and sample number	Depth	Horizon	Percentage of clay minerals					
			Mont-morillonite	14 Angstrom intergrade	Kaolinite	Gibbsite	Quartz	Mica
	In							
Albany:								
S32-38-1	0-8	A1	6	51	23	0	20	0
S32-38-3	26-46	A22	*	56	22	0	22	0
S32-38-4	46-67	B21t	7	38	51	0	4	0
Apalachee:								
S32-35-1	0-10	A	18	14	51	0	10	7
S32-35-3	18-25	B21	59	16	20	0	3	2
S32-35-4	25-46	B22g	50	21	25	0	4	0
S32-35-5	46-66	B22g	46	14	30	0	6	4
Blanton:								
S32-41-1	0-8	Ap	0	55	28	0	17	0
S32-41-3	15-41	A22	0	40	14	0	46	0
S32-41-6	67-80	B2t	0	47	40	0	13	0
Chipola:								
S32-12-1	0-10	Ap	0	47	30	11	12	0
S32-12-3	22-32	A22	0	50	25	12	13	0
S32-12-5	35-56	B2t	0	44	38	14	4	0
S32-12-7	75-94	C	0	37	47	12	4	0
Clarendon:								
S32-4-1	0-8	Ap	0	35	38	0	27	0
S32-4-3	16-21	B21t	0	36	56	0	8	0
S32-4-5	26-52	B23t	0	31	60	0	9	0
Compass:								
S32-17-1	0-8	A1	*	35	30	0	15	0
S32-17-2	8-16	B1	0	48	30	0	22	0
S32-17-5	33-40	B23t	0	39	50	0	11	0
S32-17-8	64-74	IIB26t	0	9	81	0	5	0
Dothan:								
S32-5-1	0-5	Ap	0	42	28	14	16	0
S32-5-3	10-34	B22t	0	28	32	15	25	0
S32-5-5	54-76	B24t	0	25	45	0	30	0
Duplin:								
S32-31-1	0-9	Ap	0	28	56	0	12	4
S32-31-3	17-23	B21t	0	16	76	0	8	0
S32-31-5	46-64	B23tg	7	14	74	0	5	0
Esto:								
S32-24-1	0-3	A1	0	23	46	0	31	0
S32-24-3	12-18	B1t	0	20	73	0	4	3
S32-24-5	36-43	B22t	0	8	86	0	3	3
S32-24-8	73-81	B23t	0	5	84	0	6	5
Faceville:								
S32-29-1	0-5	Ap	0	18	73	0	9	*
S32-29-3	20-30	B22t	0	9	79	0	10	2
S32-29-6	61-70	IIC	0	6	87	0	7	0
Fuquay:								
S32-22-1	0-6	A1	0	27	20	16	37	0
S32-22-3	12-26	A22	0	33	25	31	11	0
S32-22-6	44-55	B21t	0	24	44	24	8	0
S32-22-8	71-80	B22t	0	19	58	18	5	0
Greenville:								
S32-9-1	0-8	Ap	*	38	62	0	0	0
S32-9-3	22-38	B21t	*	27	73	0	0	0
S32-9-5	52-72	B22t	0	32	60	0	0	0
Hornsville:								
S32-32-1	0-4	A1	2	15	69	0	11	2
S32-32-3	9-19	B21t	2	11	81	0	6	0
S32-32-7	59-76	B3	8	9	76	0	7	0

See footnote at end of table.

TABLE 19.--CLAY MINERALOGY OF SELECTED SOILS--Continued

Soil series and sample number	Depth	Horizon	Percentage of clay minerals					
			Mont-morillonite	14 Angstrom intergrade	Kaolinite	Gibbsite	Quartz	Mica
	In							
Lakeland:								
S32-19-3----------	8-20	C2	0	53	11	23	13	0
S32-19-4----------	20-40	C2	0	53	13	13	21	0
Leefield:								
S32-40-1----------	0-9	Ap	0	45	35	0	20	0
S32-40-5----------	28-43	B21t	0	38	39	0	23	0
S32-40-7----------	64-84	B22t	0	5	95	0	0	0
Orangeburg:								
S32-11-3----------	17-32	B22t	0	28	47	21	4	0
S32-11-6----------	61-72	B23t	0	37	41	13	9	0
Red Bay:								
S32-26-1----------	0-9	Ap	0	32	60	0	8	0
S32-26-3----------	16-32	B22t	8	26	58	0	8	0
S32-26-6----------	62-76	B23t	6	23	64	0	7	0
Troup:								
S32-20-1----------	0-5	Ap	0	39	10	38	13	0
S32-20-3----------	25-47	A22	0	43	13	33	11	0
S32-20-5----------	57-75	B2t	0	39	13	44	4	0

* Trace.

TABLE 20.--ENGINEERING TEST DATA

[Tests performed by the Florida Department of Transportation (FDOT) in cooperation with the U.S. Bureau of Public Roads, in accordance with standard procedures of the American Association of State Highway and Transportation Officials (AASHTO) (1)]

Soil name and location	FDOT report number	Depth	Moisture density [1]: Maximum dry density	Moisture density [1]: Optimum moisture content	Mechanical analysis [2]: Passing sieve--No. 10 (2.0 mm)	Passing sieve--No. 40 (0.42 mm)	Passing sieve--No. 200 (0.074 mm)	Smaller than--0.05 mm	Smaller than--0.02 mm	Smaller than--0.005 mm	Smaller than--0.002 mm	Liquid limit	Plasticity index	Classification: AASHTO [3]	Classification: Unified [4]
		In	Lb/cu ft	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct			
Albany sand:															
About 17 miles south of Marianna; about 150 feet east of Florida Highway 73; NW1/4 SW1/4 sec. 22, T. 6 N., R. 8 W.	50	46-67	122.2	11.5	100	78	24	21	17	13	12	---	NP [5]	A-2-4(0)	SM
	51	67-80	113.1	13.3	100	88	33	29	24	21	19	36	21	A-2-6(2)	SC
Bethera silt loam:															
About 7 miles east of Bascom; 1 mile east of Florida Highway 164; SW1/4 NE1/4 sec. 22, T. 6 N., R. 8 W.	45	18-72	101.4	19.5	100	99	87	81	66	50	42	45	29	A-7-6(17)	CL
Blanton coarse sand:															
About 6 miles east-southeast of Malone; 2.5 miles south of Florida Highway 2; SW1/4 NE1/4 sec. 7, T. 6 N., R. 8 W.	55	67-80	119.5	11.2	100	69	28	26	21	16	14	33	12	A-2-6(0)	SC
Chipola loamy coarse sand:															
About 6 miles north of Marianna; about 3/4 mile north of Florida Highway 162; 1/2 mile east of Chipola River; NE1/4NW1/4 sec. 32, T. 6 N., R. 10 W.	20	56-75	125.8	9.2	96	59	20	17	12	10	8	---	NP	A-2-4(0)	SM

See footnotes at end of table.

TABLE 20.--ENGINEERING TEST DATA--Continued

Soil name and location	FDOT report number	Depth	Moisture density [1]: Maximum dry density	Moisture density [1]: Optimum moisture content	Mechanical analysis [2]: Passing sieve--: No. 10 (2.0 mm)	Passing sieve--: No. 40 (0.42 mm)	Passing sieve--: No. 200 (0.074 mm)	Smaller than--: 0.05 mm	Smaller than--: 0.02 mm	Smaller than--: 0.005 mm	Smaller than--: 0.002 mm	Liquid limit	Plasticity index	Classification: AASHTO [3]	Classification: Unified [4]
		In	Lb/ cu ft	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct			
Clarendon fine sandy loam:															
About 5 miles southeast of Marianna; about 1 mile south of U.S. Highway 90; SW1/4SE1/4 sec. 20, T. 4 N., R. 9 W.	8	8-16	120.2	11.8	100	88	45	40	28	22	19	24	10	A-4(2)	SC
	9	26-52	117.4	14.0	100	85	42	36	26	20	20	33	20	A-6(3)	SC
Compass loamy sand:															
About 5 miles southeast of Marianna: 1 mile south of U.S. Highway 90; about 1/2 mile east of dirt road cross-roads; north side of old U.S. Highway 90; NE1/4 SE1/4 sec. 20, T. 4 N., R. 9 W.	28	40-57	114.9	14.6	100	78	43	37	29	26	24	39	20	A-6(4)	SC
Dothan loamy sand:															
About 1 mile south of Marianna; 100 feet west of Florida Highway 73; NE1/4 sec. 16, T. 4 N., R. 10 W.	10	10-34	116.8	12.8	100	90	40	35	31	23	22	34	18	A-6(3)	SC
	11	54-76	120.5	11.3	100	88	30	26	20	17	17	28	12	A-2-6(0)	SC
Duplin fine sandy loam:															
About 3 miles southeast of Graceville; 1/4 mile north of Florida Highway 169; 1/2 mile west of Florida Highway 193; NW1/4SW1/4 sec. 12, T. 6 N., R. 13 W.	42	23-46	97.4	23.2	100	94	68	56	42	37	36	58	34	A-7-6(18)	CH

See footnotes at end of table.

TABLE 20.--ENGINEERING TEST DATA--Continued

Soil name and location	FDOT report number	Depth	Moisture density [1]: Maximum dry density	Moisture density [1]: Optimum moisture content	Mechanical analysis [2]: Passing sieve--No. 10 (2.0 mm)	Passing sieve--No. 40 (0.42 mm)	Passing sieve--No. 200 (0.074 mm)	Smaller than--0.05 mm	Smaller than--0.02 mm	Smaller than--0.005 mm	Smaller than--0.002 mm	Liquid limit	Plasticity index	Classification: AASHTO [3]	Classification: Unified [4]
		In	Lb/cu ft	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct			
Esto loamy sand: About 1/4 mile north of Florida Highway 166; 4 miles north of Marianna; NE1/4 SW1/4 sec. 23, T. 5 N., R. 10 W.	35	18-36	96.2	22.3	100	94	68	65	60	54	51	59	35	A-7-6(18)	CH
Faceville loamy fine sand: About 1 mile northwest of Marianna; 1 mile north of U.S. Highway 90; SW1/4 SE1/4 sec. 28, T. 5 N., R. 10 W.	40	20-30	98.3	17.2	100	95	57	51	43	39	34	48	27	A-7-6(12)	CL
Fuquay coarse sand: About 7 miles southwest of Marianna on west side of Florida Highway 167; SE1/4 SE1/4 sec. 34, T. 4 N., R. 11 W.	32	12-32	123.9	9.9	100	65	19	15	9	5	4	---	NP	A-2-4(0)	SM
	33	55-80	115.3	14.0	97	70	34	30	23	18	15	41	24	A-2-7(3)	SC
Greenville fine sandy loam: About 4 miles north of Marianna on Old Bumpnose Road, west side of road; SW1/4 NE1/4 sec. 29, T. 5 N., R. 10 W.	15	8-52	108.6	17.1	100	94	52	50	45	40	38	49	24	A-7-6(10)	CL
Lakeland sand: About 15 miles southeast of Marianna; 100 feet east of Florida Highway 167, SE1/4 SW1/4 sec. 34, T. 2 N., R. 11 W.	30	8-40	108.5	12.3	100	72	8	6	4	2	1	---	NP	A-3(0)	SP-SM

See footnotes at end of table.

TABLE 20.--ENGINEERING TEST DATA--Continued

Soil name and location	FDOT report number	Depth	Moisture density[1]: Maximum dry density	Moisture density[1]: Optimum moisture content	Mechanical analysis[2]: Passing sieve--No. 10 (2.0 mm)	Passing sieve--No. 40 (0.42 mm)	Passing sieve--No. 200 (0.074 mm)	Smaller than--0.05 mm	Smaller than--0.02 mm	Smaller than--0.005 mm	Smaller than--0.002 mm	Liquid limit	Plasticity index	Classification: AASHTO[3]	Classification: Unified[4]
		In	Lb/cu ft	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct			
Leefield loamy sand:															
About 4 miles southeast of Graceville; about 3/4 mile east of Florida Highway 169; NE1/4SE1/4 sec. 18, T. 6 N., R. 12 W.	54	43-84	115.4	14.1	100	87	36	33	26	19	17	34	17	A-6(2)	SC
Orangeburg loamy sand:															
About 8 miles south of Marianna on west side of Florida Highway 71; SW1/4SE1/4 sec. 7, T. 3 N., R. 9 W.	18	17-48	118.1	13.0	100	75	36	35	29	27	26	41	26	A-7-6(3)	SC
	19	48-72	118.2	12.7	100	70	30	29	25	2	21	40	22	A-2-6(2)	SC
Pansey fine sandy loam:															
About 4 miles southeast of Graceville; about 3/4 mile east of Florida Highway 169; NE1/4SE1/4 sec. 18, T. 6 N., R. 12 W.	52	26-53	118.8	13.1	100	91	38	33	27	20	17	29	12	A-6(0)	SC
	53	53-80	120.1	12.2	100	89	35	30	23	18	14	27	11	A-2-6(0)	SC
Red Bay fine sandy loam:															
About 7 miles north of Marianna near Hays Spring Run; NE1/4SW1/4 sec. 29, T. 6 N., R. 10 W.	37	16-49	113.4	15.1	100	88	48	44	37	34	32	40	23	A-6(4)	SC
Tifton loamy sand:															
About 2 1/2 miles southwest of Marianna; 1/4 mile south of Florida Highway 276, SW1/4 SW1/4 sec. 8, T. 4 N., R. 10 W.	16	31-38	111.7	15.8	100	93	45	45	37	35	33	42	25	A-7-6(7)	SC
	17	55-68	112.2	14.7	100	91	38	35	31	29	25	42	23	A-6(3)	SC

See footnotes at end of table.

TABLE 20.--ENGINEERING TEST DATA--Continued

Soil name and location	FDOT report number	Depth	Moisture density [1]: Maximum dry density	Moisture density [1]: Optimum moisture content	Mechanical analysis [2], Passing sieve--: No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.074 mm)	Smaller than--: 0.05 mm	0.02 mm	0.005 mm	0.002 mm	Liquid limit	Plasticity index	Classification: AASHTO [3]	Unified [4]
		In	Lb/cu ft	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct	Pct			
Troup sand:															
About 4 miles north of Jackson-Calhoun County line on Florida Highway 167; SE1/4 NW1/4 sec. 3, T. 2 N., R. 11 W.	31	57-75	120.1	10.2	100	77	20	17	12	7	6	NP	NP	A-2-4(0)	SM
Yonges fine sandy loam:															
About 5 1/2 miles north of Marianna; about 1/4 mile east of Bumpnose Road; NW1/4SW1/4 sec. 8, T. 5 N., R. 10 W.	47	19-34	108.9	16.5	100	98	60	53	43	36	29	42	28	A-7-6(12)	CL
	48	34-62	108.1	17.1	100	95	63	56	48	40	28	43	28	A-7-6(13)	CL

[1] Based on AASHTO Designation T99-70 (1).

[2] Mechanical analysis according to AASHTO Designation T88-70 (1). Results by this procedure differ somewhat from results obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHTO procedure, the fine material is analyzed by the hydrometer method and the various grain-sized fractions are calculated on the basis of all the material, including that coarser than 2 millimeter in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than 2 millimeter in diameter is excluded from calculations of grain-sized fractions. The mechanical analyses used in this table are not suitable for use in naming textural classes for soil.

[3] Based on AASHTO Designation M 145-66 (1).

[4] Based on Unified Classification (D-2487-69) (2).

[5] Nonplastic.

TABLE 21.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Alapaha	Loamy, siliceous, thermic Arenic Plinthic Paleaquults
Albany	Loamy, siliceous, thermic Grossarenic Paleudults
Apalachee	Very-fine, montmorillonitic, thermic Fluvaquentic Dystrochrepts
Bethera	Clayey, mixed, thermic Typic Paleaquults
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Bonifay	Loamy, siliceous, thermic Grossarenic Plinthic Paleudults
Chipola	Loamy, siliceous, thermic Arenic Hapludults
Clarendon	Fine-loamy, siliceous, thermic Plinthaquic Paleudults
Compass	Coarse-loamy, siliceous, thermic Plinthic Paleudults
Dorovan	Dysic, thermic Typic Medisaprists
Dothan	Fine-loamy, siliceous, thermic Plinthic Paleudults
Duplin	Clayey, kaolinitic, thermic Aquic Paleudults
Esto	Clayey, kaolinitic, thermic Typic Paleudults
Faceville	Clayey, kaolinitic, thermic Typic Paleudults
Foxworth	Thermic, coated Typic Quartzipsamments
Fuquay	Loamy, siliceous, thermic Arenic Plinthic Paleudults
Grady	Clayey, kaolinitic, thermic Typic Paleaquults
Greenville	Clayey, kaolinitic, thermic Rhodic Paleudults
Herod	Fine-loamy, siliceous, nonacid, thermic Typic Fluvaquents
Hornsville	Clayey, kaolinitic, thermic Aquic Hapludults
Iuka	Coarse-loamy, siliceous, acid, thermic Aquic Udifluvents
Lakeland	Thermic, coated Typic Quartzipsamments
Leefield	Loamy, siliceous, thermic Arenic Plinthaquic Paleudults
Oktibbeha variant	Very-fine, mixed, thermic Vertic Hapludalfs
Orangeburg	Fine-loamy, siliceous, thermic Typic Paleudults
Pamlico	Sandy or sandy-skeletal, siliceous, dysic, thermic Terric Medisaprists
Pansey	Fine-loamy, siliceous, thermic Plinthic Paleaquults
Pantego	Fine-loamy, siliceous, thermic Umbric Paleaquults
Plummer	Loamy, siliceous, thermic Grossarenic Paleaquults
Red Bay	Fine-loamy, siliceous, thermic Rhodic Paleudults
Rutlege	Sandy, siliceous, thermic Typic Humaquepts
Tifton	Fine-loamy, siliceous, thermic Plinthic Paleudults
Troup	Loamy, siliceous, thermic Grossarenic Paleudults
Wicksburg	Clayey, kaolinitic, thermic Arenic Paleudults
Yonges	Fine-loamy, mixed, thermic Typic Ochraqualfs

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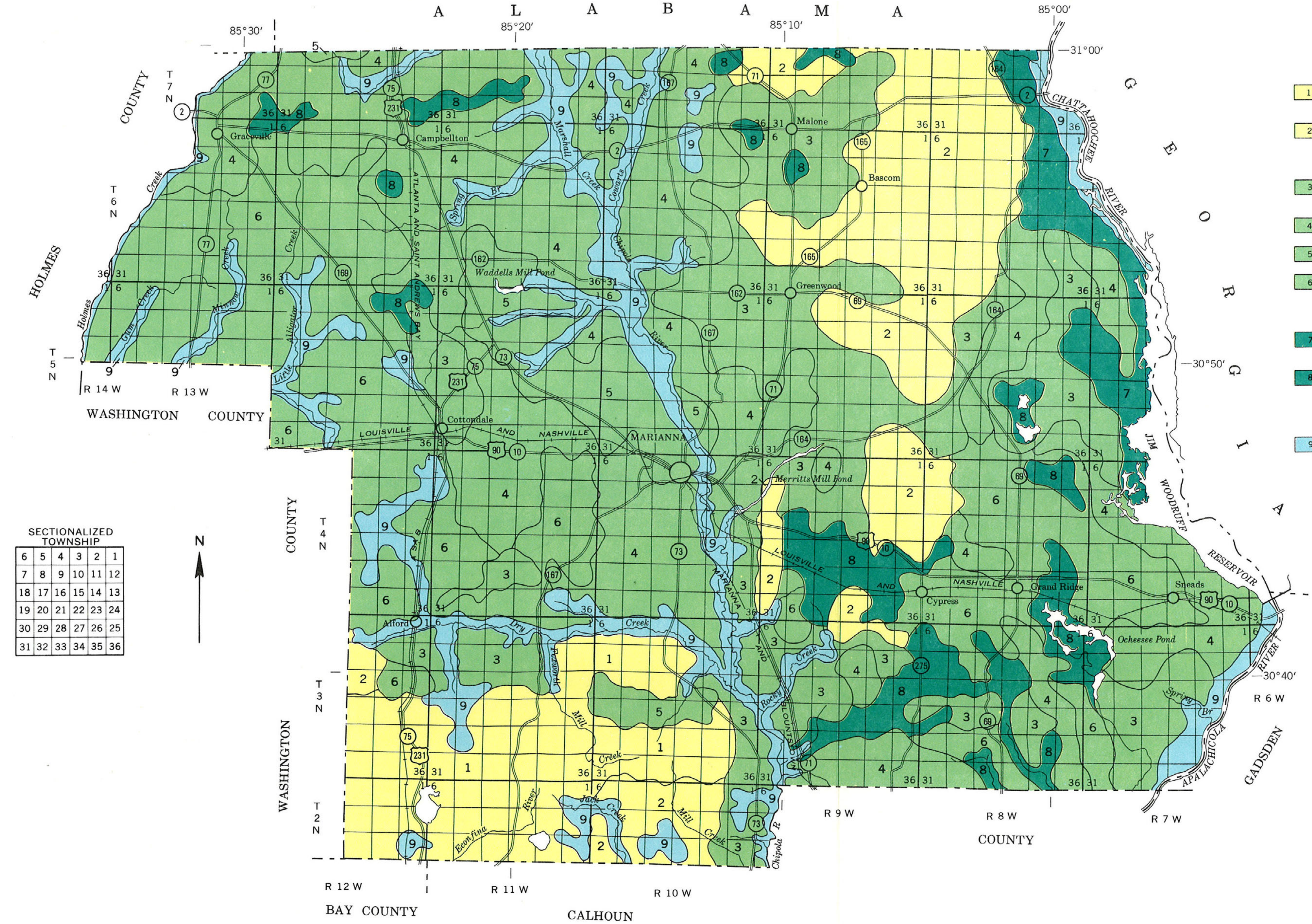


6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

LEGEND

SOILS OF THE SAND RIDGES

1 — Lakeland-Troup-Blanton: Nearly level to steep, excessively drained to moderately well drained soils, some sandy to a depth of 80 inches or more, some sandy to 40 to 80 inches and loamy below

2 — Blanton-Troup-Bonifay: Nearly level to strongly sloping, well drained and moderately well drained soils, sandy to a depth of more than 40 inches and loamy below

SOILS OF THE UPLANDS

3 — Fuquay-Chipola-Troup: Nearly level to strongly sloping, well drained soils, some sandy to a depth of 20 to 40 inches and loamy below, some sandy to more than 40 inches and loamy below

4 — Orangeburg-Dothan-Red Bay: Nearly level to strongly sloping, well drained sandy or loamy soils that have a loamy subsoil within a depth of 20 inches

5 — Greenville-Faceville: Gently sloping to strongly sloping, well drained soils, loamy or sandy to a depth of less than 20 inches and clayey below

6 — Dothan-Clarendon-Compass: Nearly level to strongly sloping, well drained to somewhat poorly drained soils, some sandy to a depth of less than 20 inches and loamy below, some sandy to 20 to 40 inches and loamy and clayey below

SOILS OF THE LOW FLATWOODS

7 — Hornsville-Duplin-Bethera: Nearly level to gently sloping, moderately well drained and poorly drained soils, loamy or silty to a depth of less than 20 inches and clayey below

8 — Clarendon-Compass-Plummer: Nearly level to strongly sloping, moderately well drained to poorly drained soils, some sandy to a depth of less than 20 inches and loamy below, some sandy to 20 to 40 inches and loamy and clayey below, some sandy to more than 40 inches and loamy below

SOILS OF THE SWAMPS, VERY WET AREAS, AND RIVER FLOOD PLAINS

9 — Grady-Bibb-Pamlico: Nearly level, poorly drained and very poorly drained soils, some sandy or loamy to a depth of less than 20 inches and clayey or loamy below, others organic over sandy material

Compiled 1978

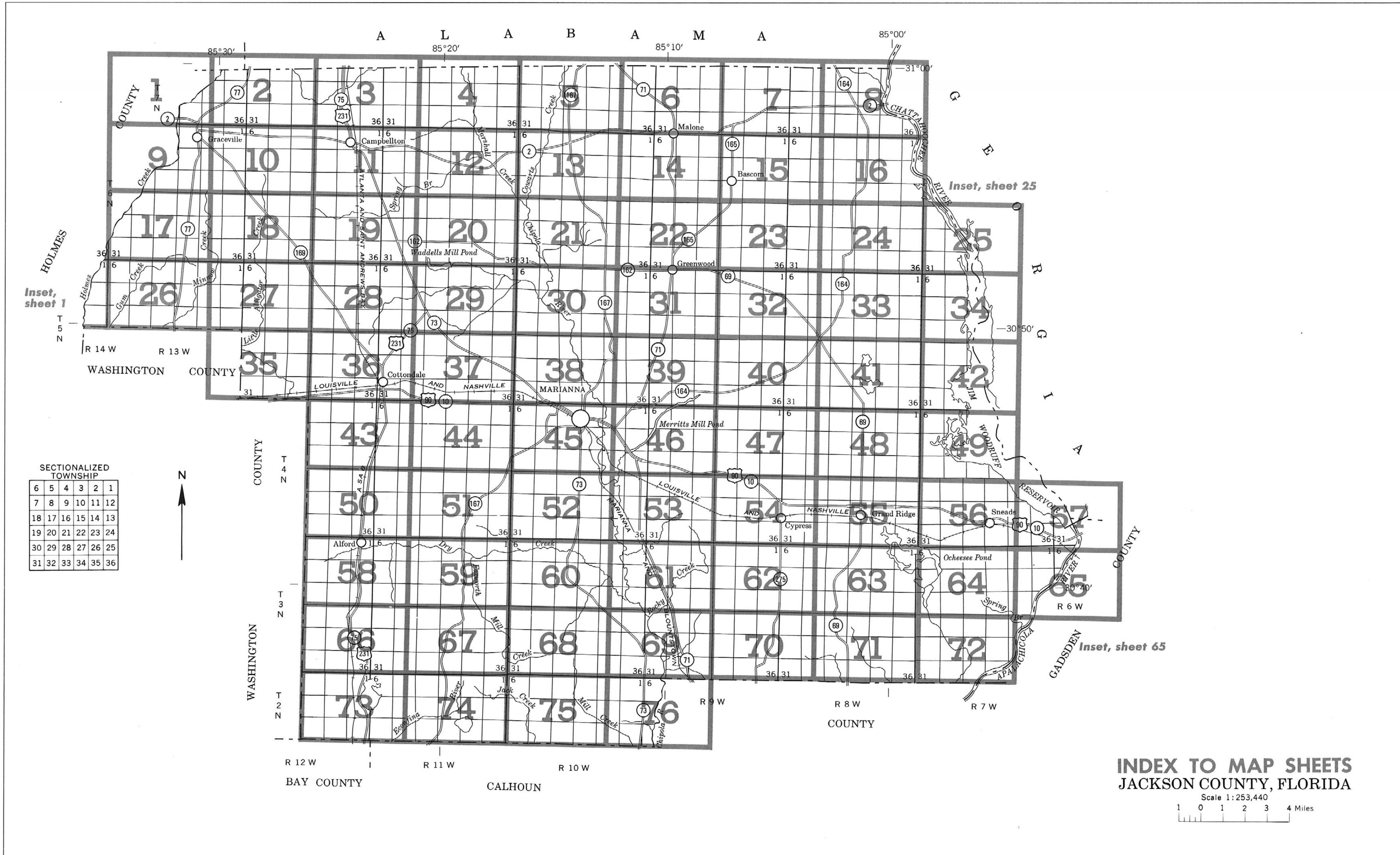
Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
UNIVERSITY OF FLORIDA
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES AND AGRICULTURAL EXPERIMENT STATIONS
SOIL SCIENCE DEPARTMENT

GENERAL SOIL MAP
JACKSON COUNTY, FLORIDA

Scale 1:253,440

1 0 1 2 3 4 Miles



6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS
JACKSON COUNTY, FLORIDA

Scale 1:253,440

1 0 1 2 3 4 Miles

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

JACKSON COUNTY, FLORIDA

UNIVERSITY OF FLORIDA
INSTITUTE OF FOOD AND AGRICULTURAL
SCIENCES AND AGRICULTURAL EXPERIMENT STATIONS
SOIL SCIENCE DEPARTMENT

SOIL LEGEND

The legend is numeric. Soil names followed by the superscript 1/ are broadly defined units. The composition of these units is more variable than that of the other units in the survey area, but has been controlled well enough to be interpreted for the expected use of the soils.

SYMBOL	NAME
1	Alapaha loamy sand
2	Albany sand, 0 to 5 percent slopes
3	Apalachee clay
4	Bethera silt loam
5	Bibb soils 1/
6	Blanton coarse sand, 0 to 5 percent slopes
7	Blanton coarse sand, 5 to 8 percent slopes
8	Bonifay sand, 0 to 5 percent slopes
9	Bonifay sand, 5 to 8 percent slopes
10	Chipola loamy sand, 0 to 5 percent slopes
11	Chipola loamy sand, 5 to 8 percent slopes
12	Clarendon fine sandy loam
13	Compass loamy sand, 0 to 2 percent slopes
14	Compass loamy sand, 2 to 5 percent slopes
15	Compass loamy sand, 5 to 8 percent slopes
16	Dorovan—Pamlico association 1/
17	Dothan loamy sand, 2 to 5 percent slopes
18	Dothan loamy sand, 5 to 8 percent slopes
19	Dothan loamy sand, 8 to 12 percent slopes
20	Duplin fine sandy loam, 0 to 2 percent slopes
21	Duplin fine sandy loam, 2 to 5 percent slopes
22	Esto loamy sand, 2 to 5 percent slopes
23	Esto loamy sand, 5 to 8 percent slopes
24	Faceville loamy fine sand, 2 to 5 percent slopes
25	Faceville loamy fine sand, 5 to 8 percent slopes
26	Faceville loamy fine sand, 8 to 12 percent slopes
27	Faceville—Esto complex, 5 to 15 percent slopes, severely eroded
28	Foxworth sand, 0 to 5 percent slopes
29	Foxworth sand, 5 to 8 percent slopes
30	Fuquay coarse sand, 0 to 5 percent slopes
31	Fuquay coarse sand, 5 to 8 percent slopes
32	Grady fine sandy loam
33	Greenville fine sandy loam, 2 to 5 percent slopes
34	Greenville fine sandy loam, 5 to 8 percent slopes
35	Hornsville fine sandy loam, 0 to 2 percent slopes
36	Hornsville fine sandy loam, 2 to 5 percent slopes
37	Iuka loam
38	Lakeland sand, 0 to 5 percent slopes
39	Lakeland sand, 5 to 8 percent slopes
40	Lakeland sand, 8 to 12 percent slopes
41	Lakeland sand, 12 to 30 percent slopes
42	Leefield loamy sand
43	Oktibbeha Variant—Rock outcrop complex, 2 to 5 percent slopes
44	Oktibbeha Variant—Rock outcrop complex, 5 to 12 percent slopes
45	Orangeburg loamy sand, 0 to 2 percent slopes
46	Orangeburg loamy sand, 2 to 5 percent slopes
47	Orangeburg loamy sand, 5 to 8 percent slopes
48	Pamlico—Pantego—Rutlege association 1/
49	Pansey fine sandy loam
50	Pits
51	Plummer sand
52	Plummer sand, depressional
53	Red Bay fine sandy loam, 0 to 2 percent slopes
54	Red Bay fine sandy loam, 2 to 5 percent slopes
55	Red Bay fine sandy loam, 5 to 8 percent slopes
56	Rutlege loamy sand
57	Tifton loamy sand, 2 to 5 percent slopes
58	Tifton loamy sand, 5 to 8 percent slopes
59	Troup sand, 0 to 5 percent slopes
60	Troup sand, 5 to 8 percent slopes
61	Troup sand, 8 to 12 percent slopes
62	Urban land
63	Wicksburg—Esto complex, 2 to 5 percent slopes
64	Yonges—Herod association 1/

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline & neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery, or flood pool — Davis Airstrip; FLOOD POOL LINE

STATE COORDINATE TICK

LAND DIVISION CORNERS (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEMS & DESIGNATIONS

- Interstate — 79
- Federal — 410
- State — 52
- County, farm or ranch — 378

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or small — water; w

PITS

- ·pit
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label) — Indian Mound
- Located object (label) — Tower
- Tank (label) — GAS
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label) — CANAL
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial — water; w
- Intermittent — int; i

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS — CeA FoB2

ESCARPMENTS

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

GULLY

DEPRESSION OR SINK

SOIL SAMPLE SITE (normally not shown) — S

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot

N

1 Mile
5000 Feet
Scale 1:20000

JACKSON COUNTY, FLORIDA NO. 1

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

2

JACKSON COUNTY, FLORIDA — SHEET NUMBER 2

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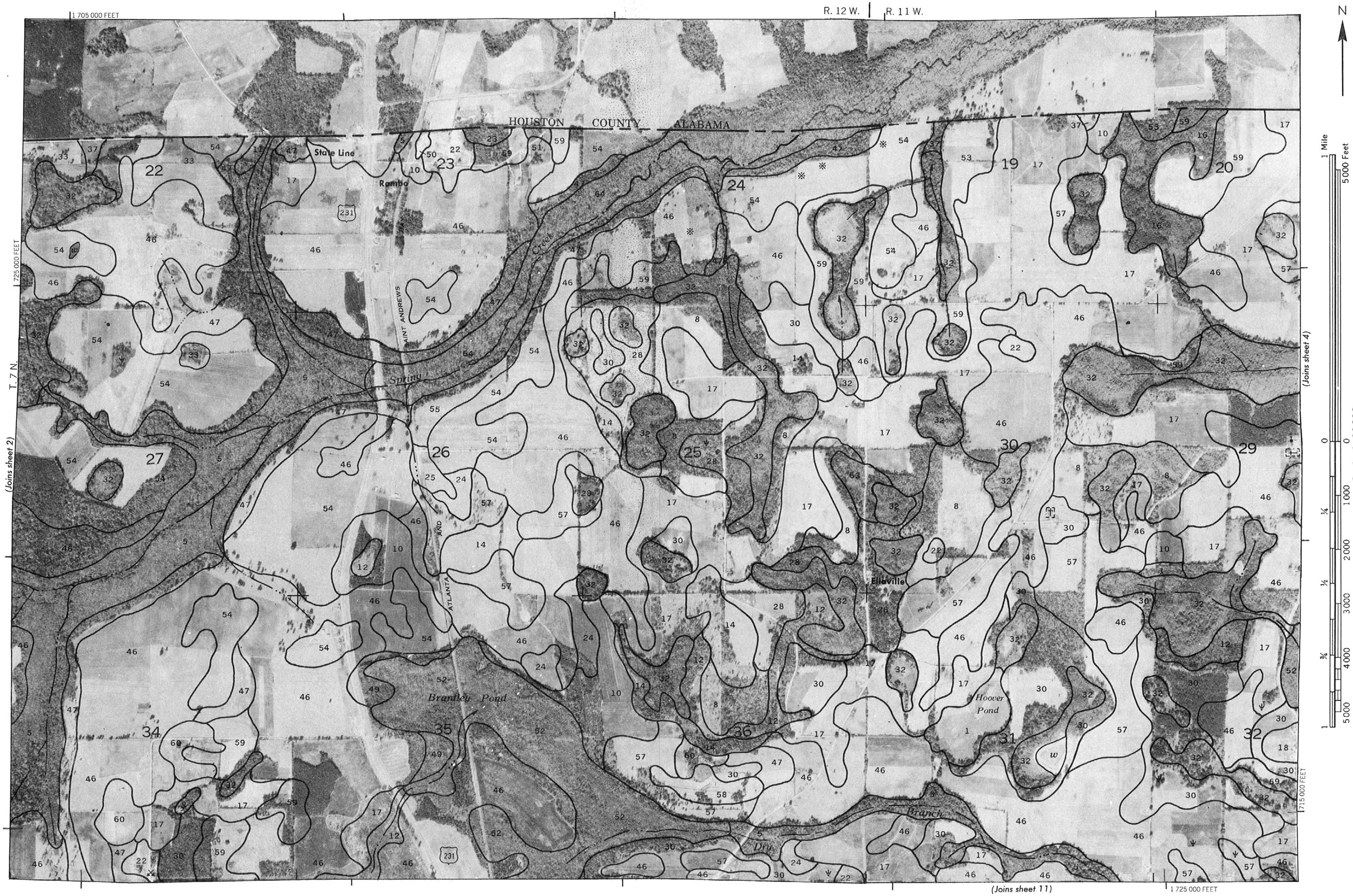
JACKSON COUNTY, FLORIDA NO. 2

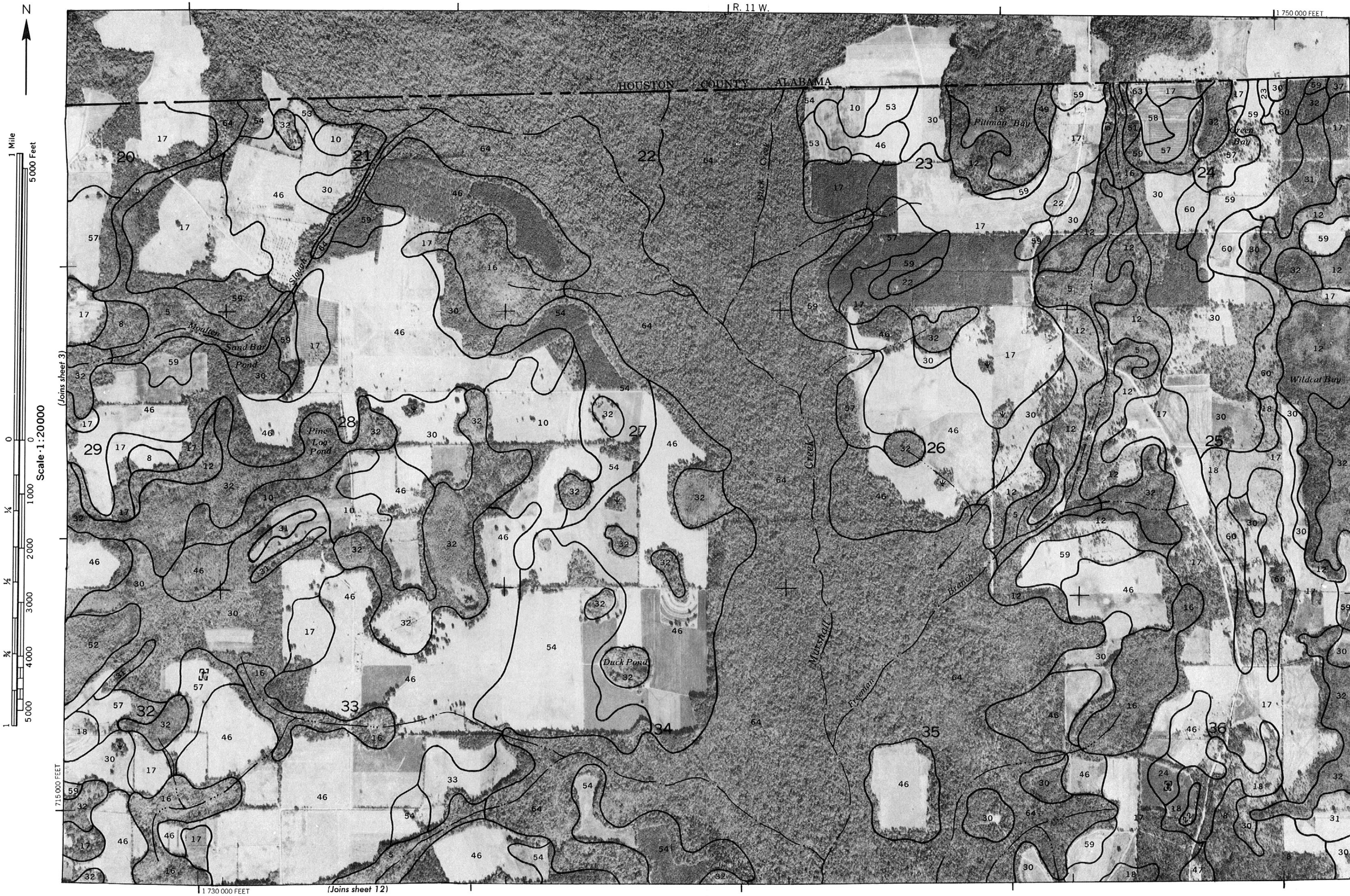
JACKSON COUNTY, FLORIDA — SHEET NUMBER 3

JACKSON COUNTY, FLORIDA NO. 3

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

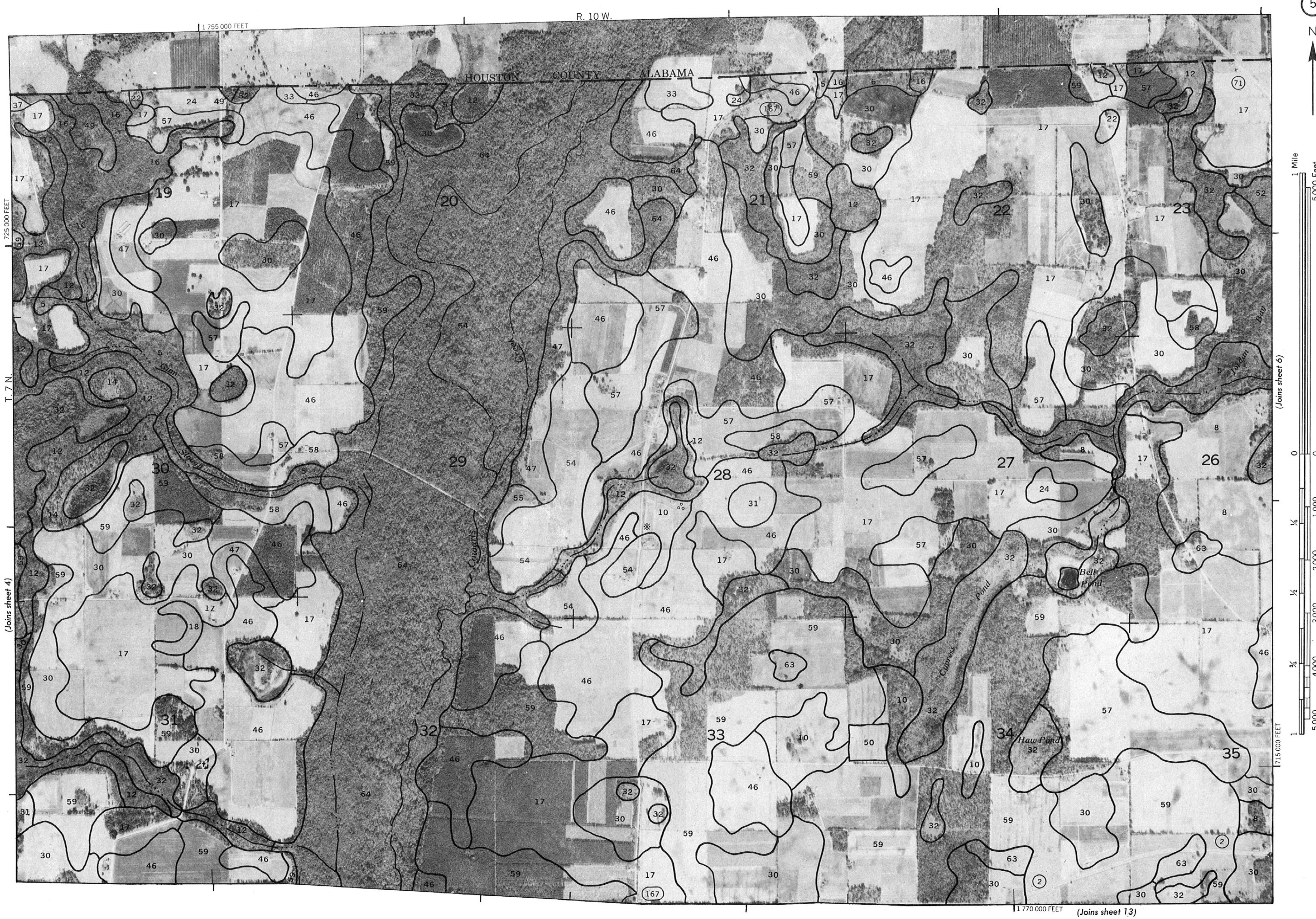


JACKSON COUNTY, FLORIDA — SHEET NUMBER 4



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

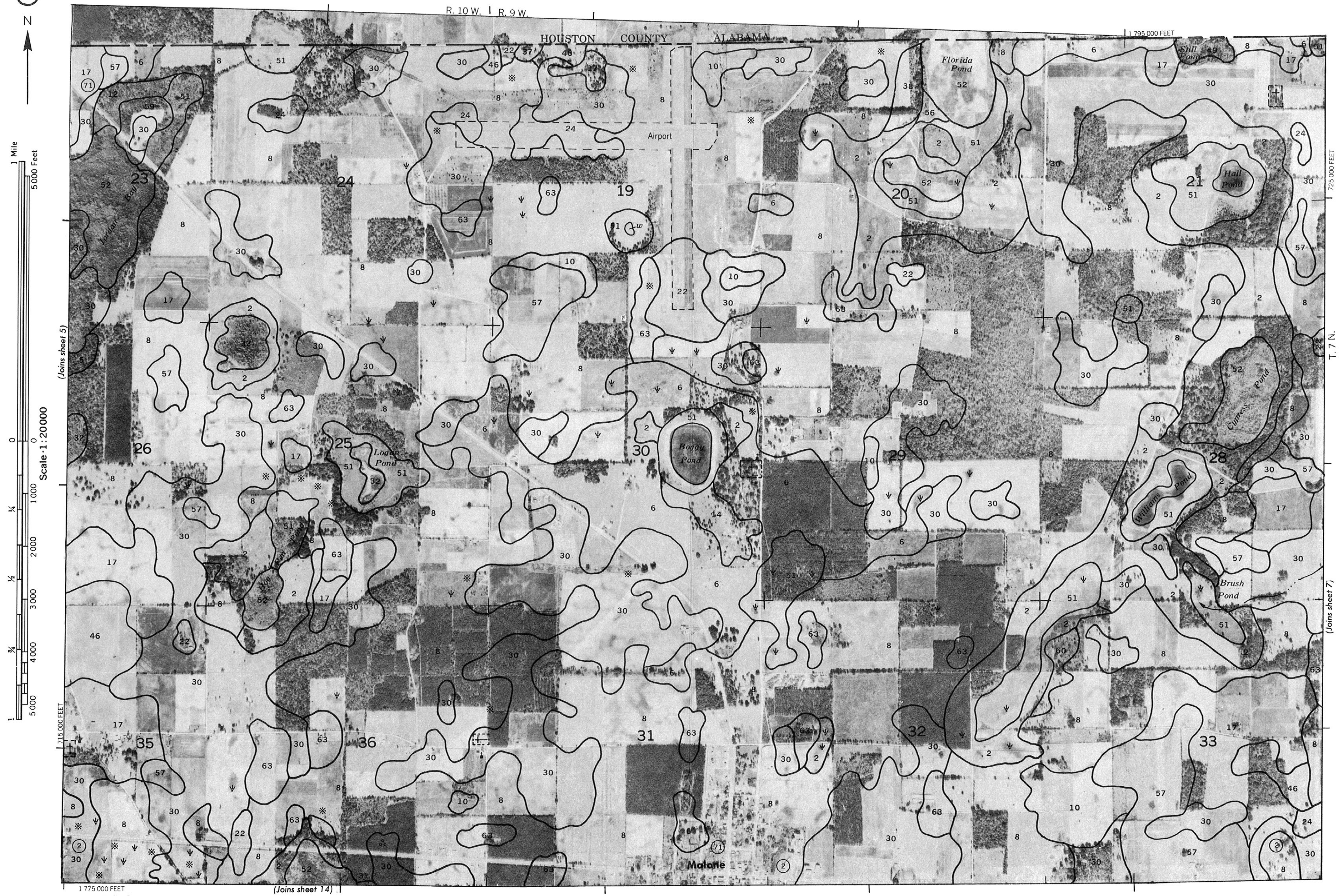
JACKSON COUNTY, FLORIDA NO. 4



JACKSON COUNTY, FLORIDA NO. 5

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

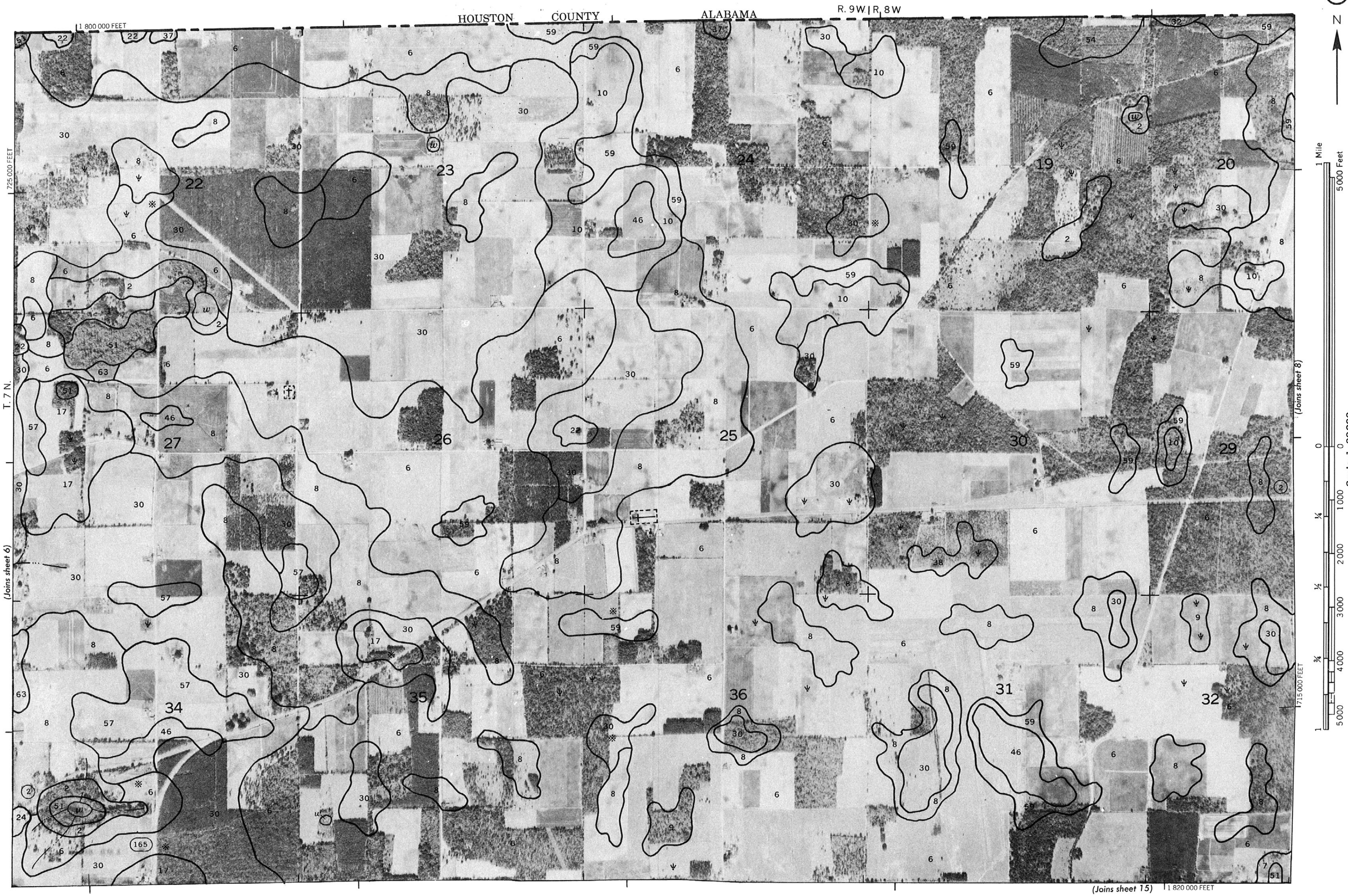
JACKSON COUNTY, FLORIDA — SHEET NUMBER 6



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 6

7



JACKSON COUNTY, FLORIDA NO. 7

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA — SHEET NUMBER 8

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
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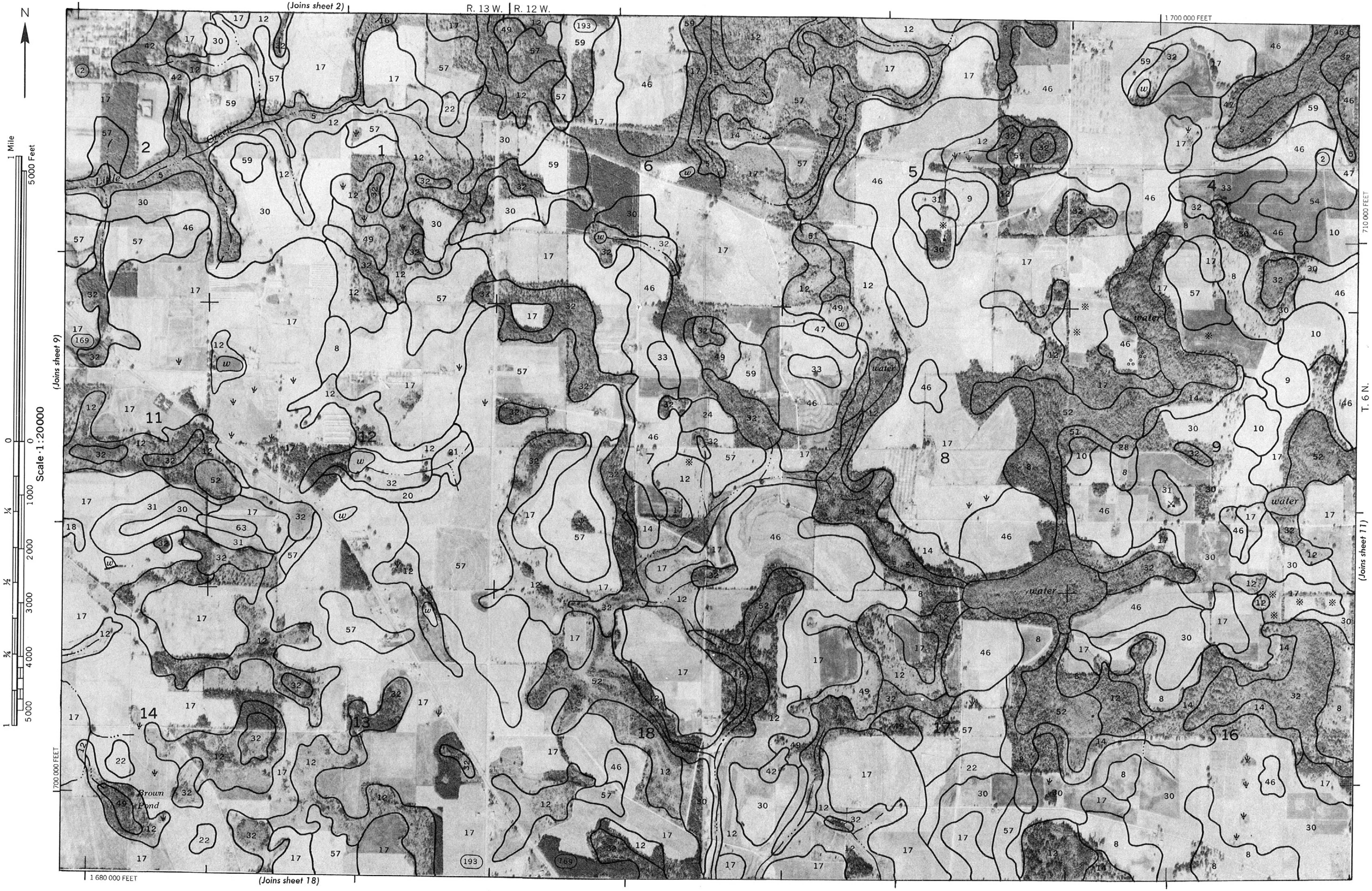
JACKSON COUNTY, FLORIDA NO. 8

JACKSON COUNTY, FLORIDA NO. 9

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA — SHEET NUMBER 10



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 10

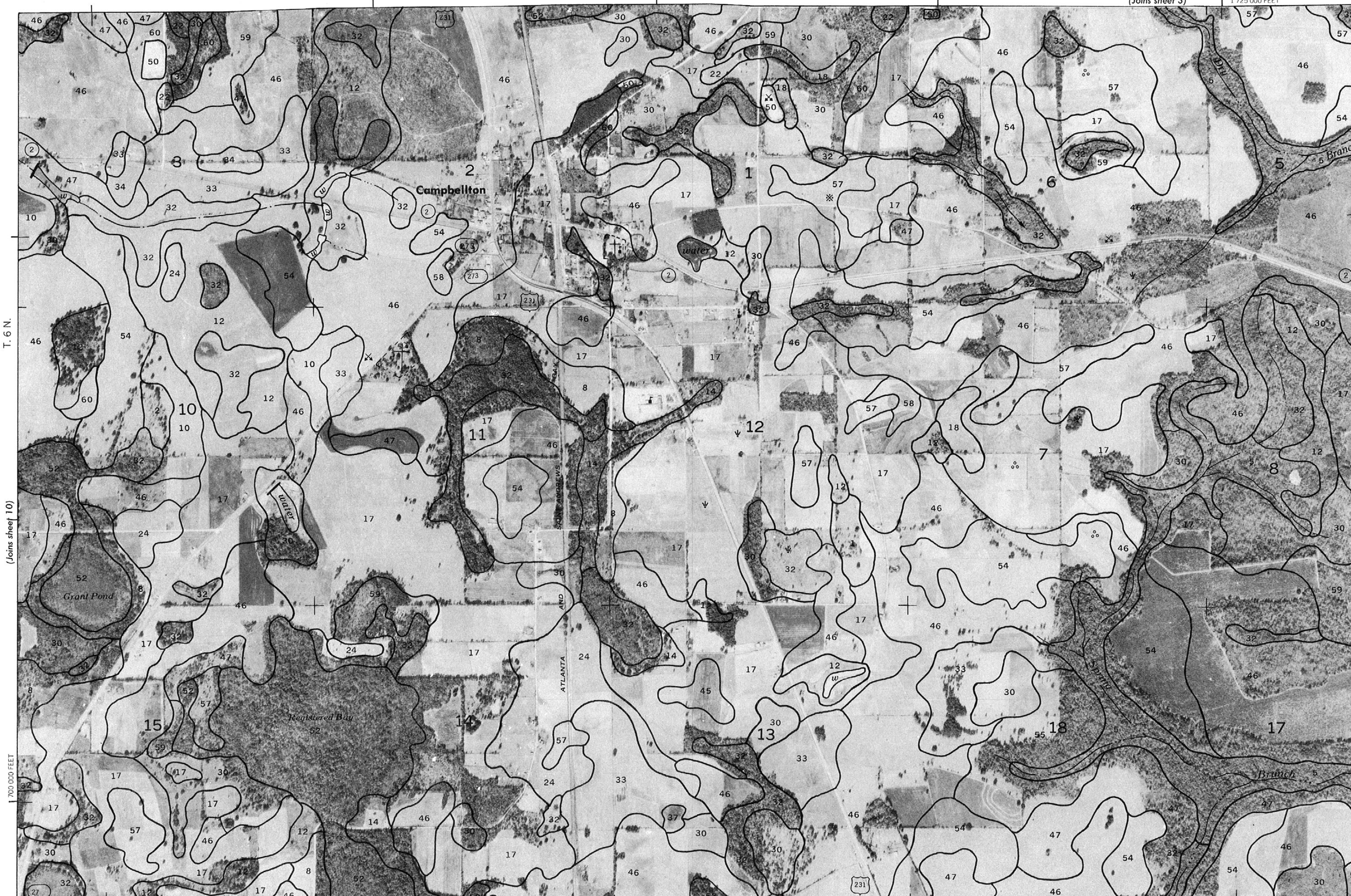
11

N

R. 12 W. | R. 11 W.

(Joins sheet 3)

1 725 000 FEET



T. 6 N.

(Joins sheet 10)

(Joins sheet 12)

710 000 FEET

700 000 FEET

1 705 000 FEET

(Joins sheet 19)

1 Mile

5000 Feet

Scale 1:20000

0 ¼ ½ ¾ 1

0 1000 2000 3000 4000 5000

JACKSON COUNTY, FLORIDA NO. 11

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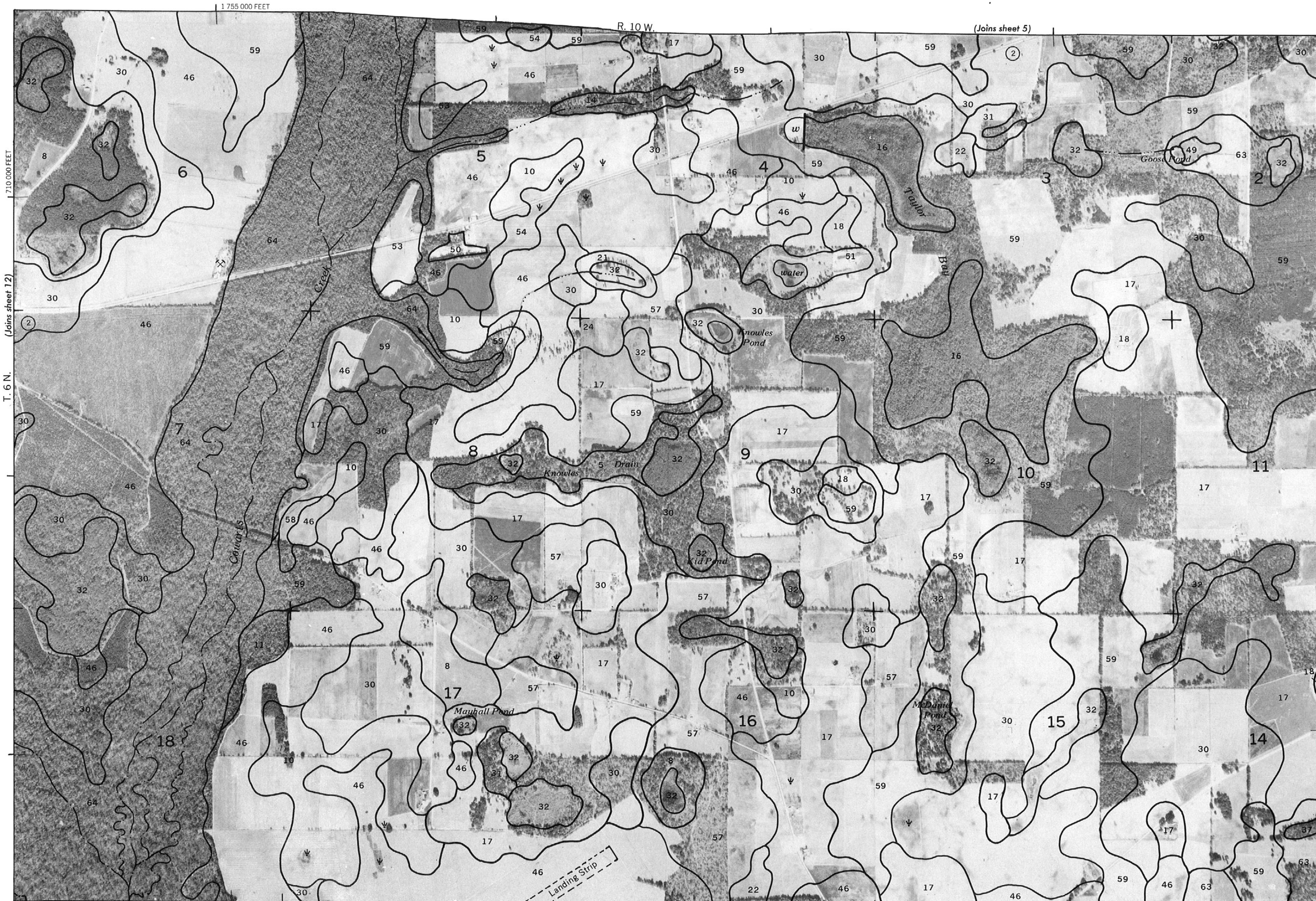
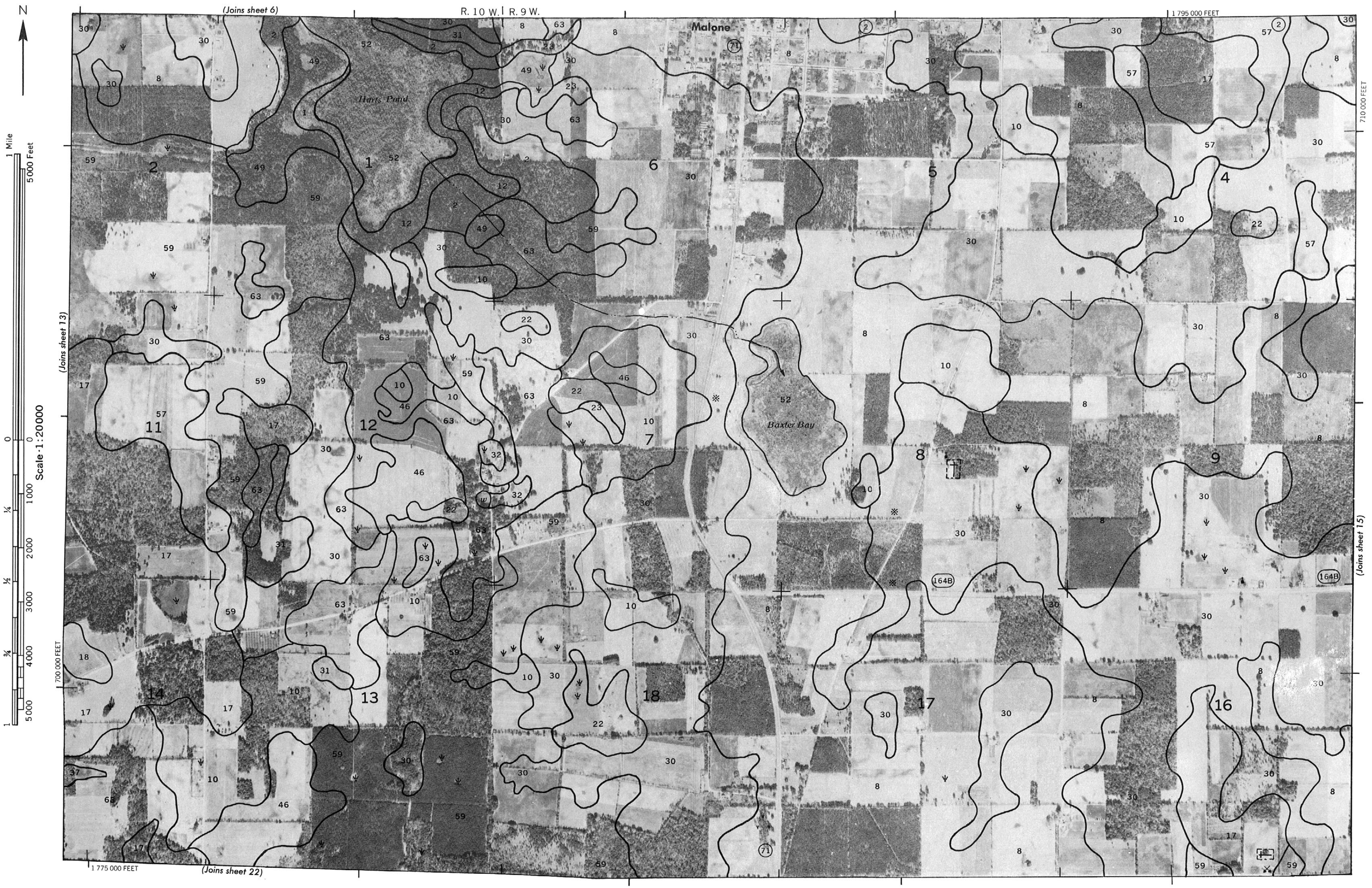
JACKSON COUNTY, FLORIDA NO. 12



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
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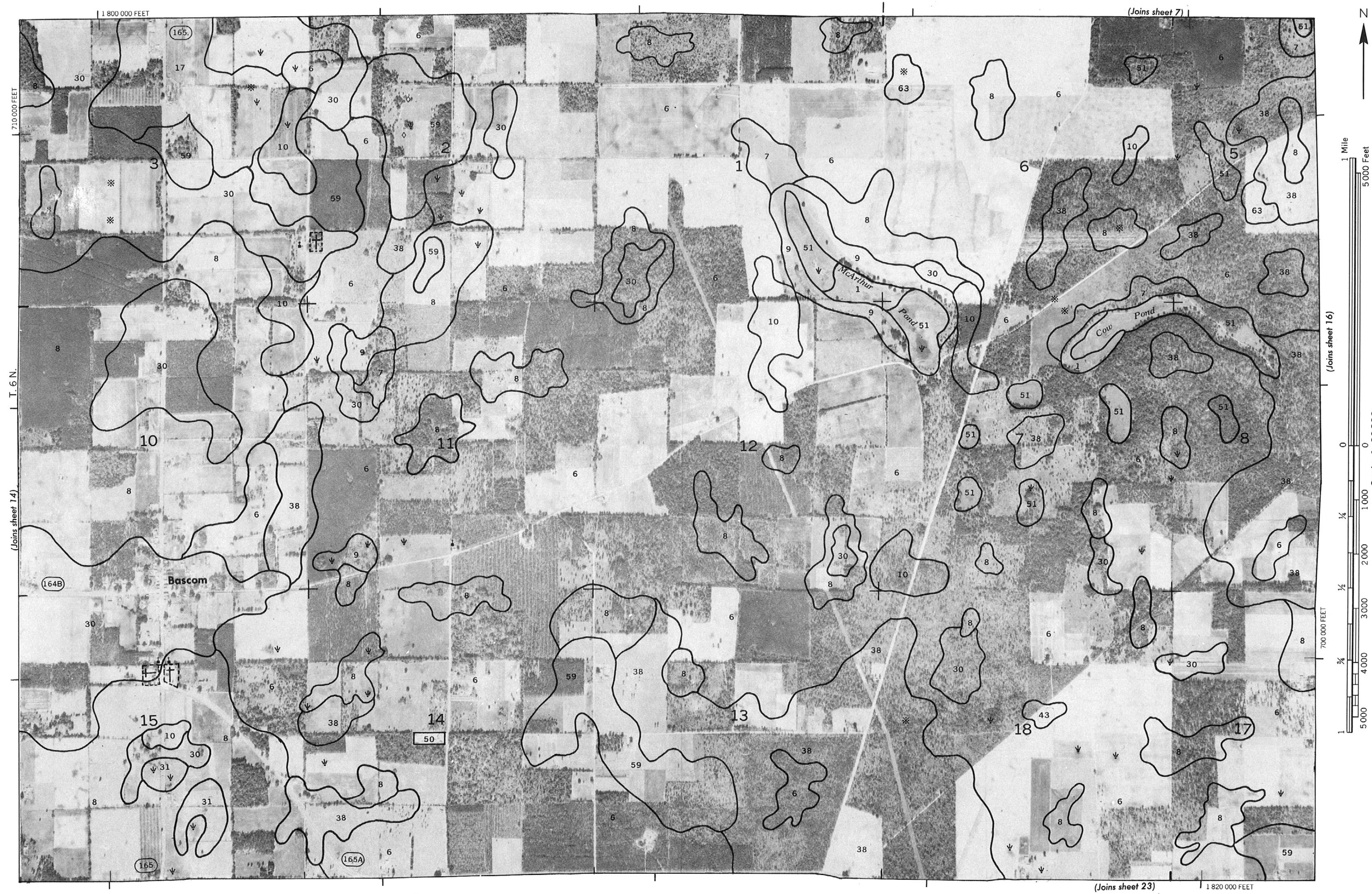
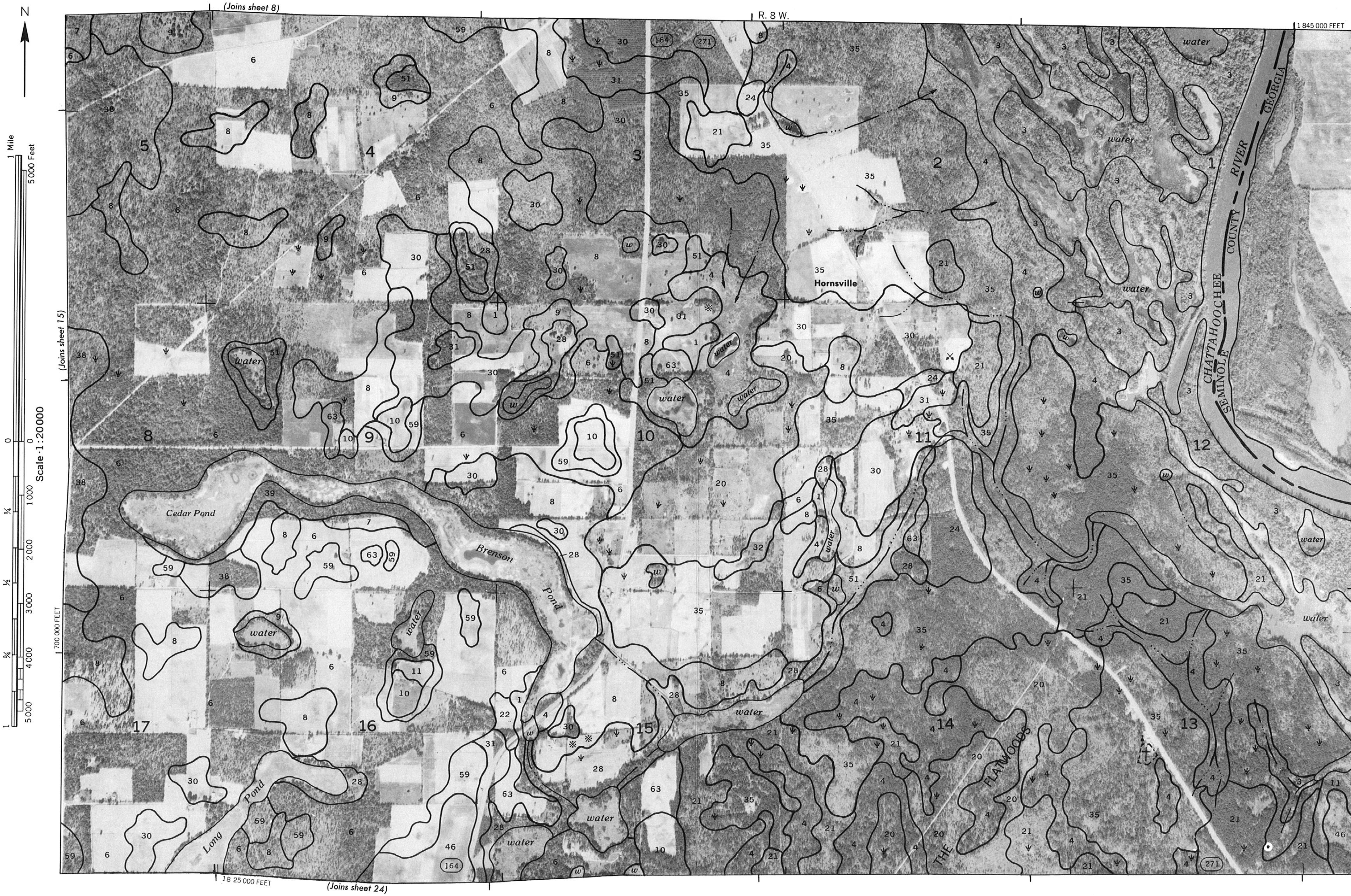
Coordinate grid ticks and land division corners, if shown, are approximately positioned.





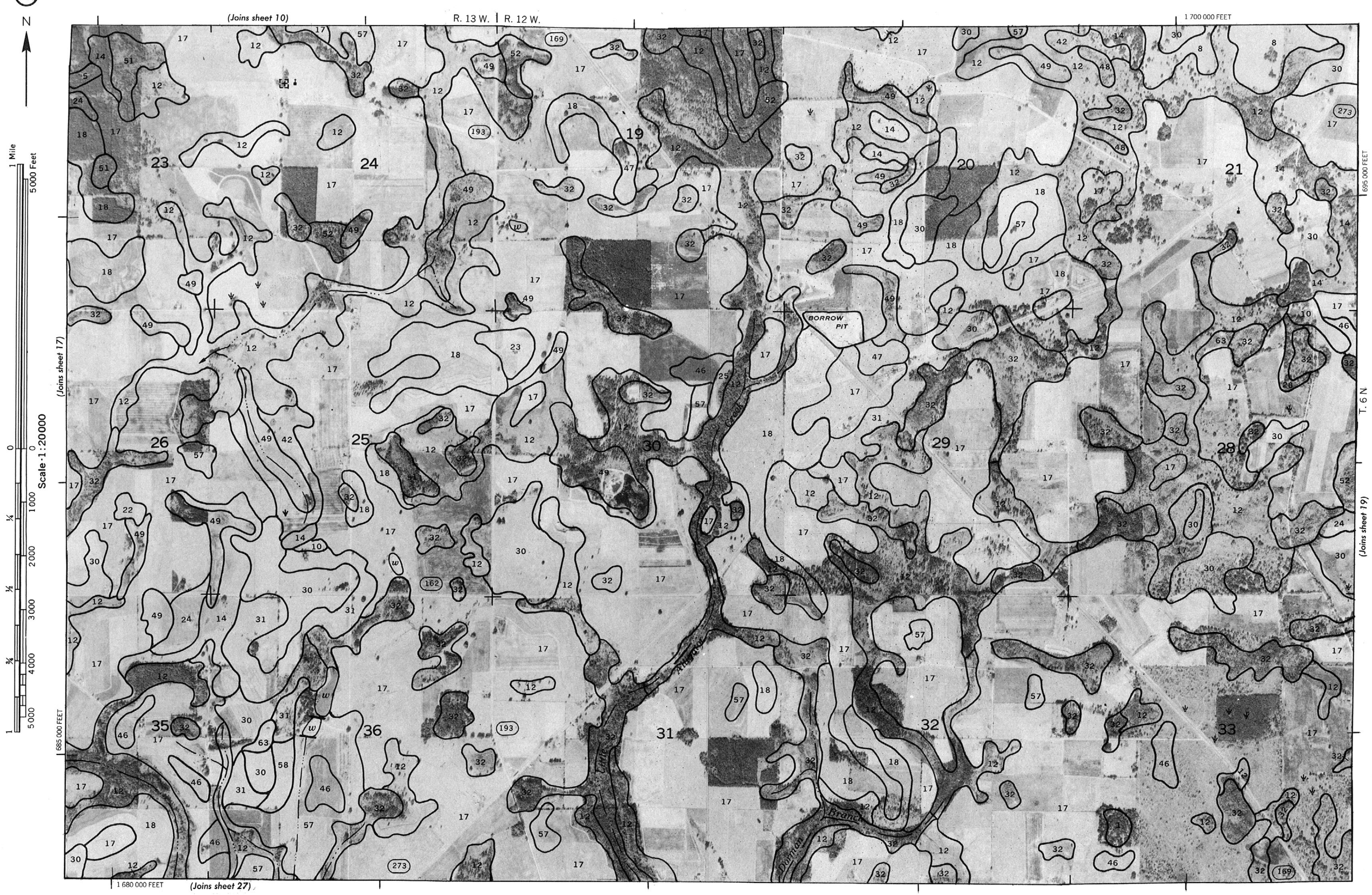
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

17

1 Mile
5000 Feet
Scale 1:20000

JACKSON COUNTY, FLORIDA NO. 17

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



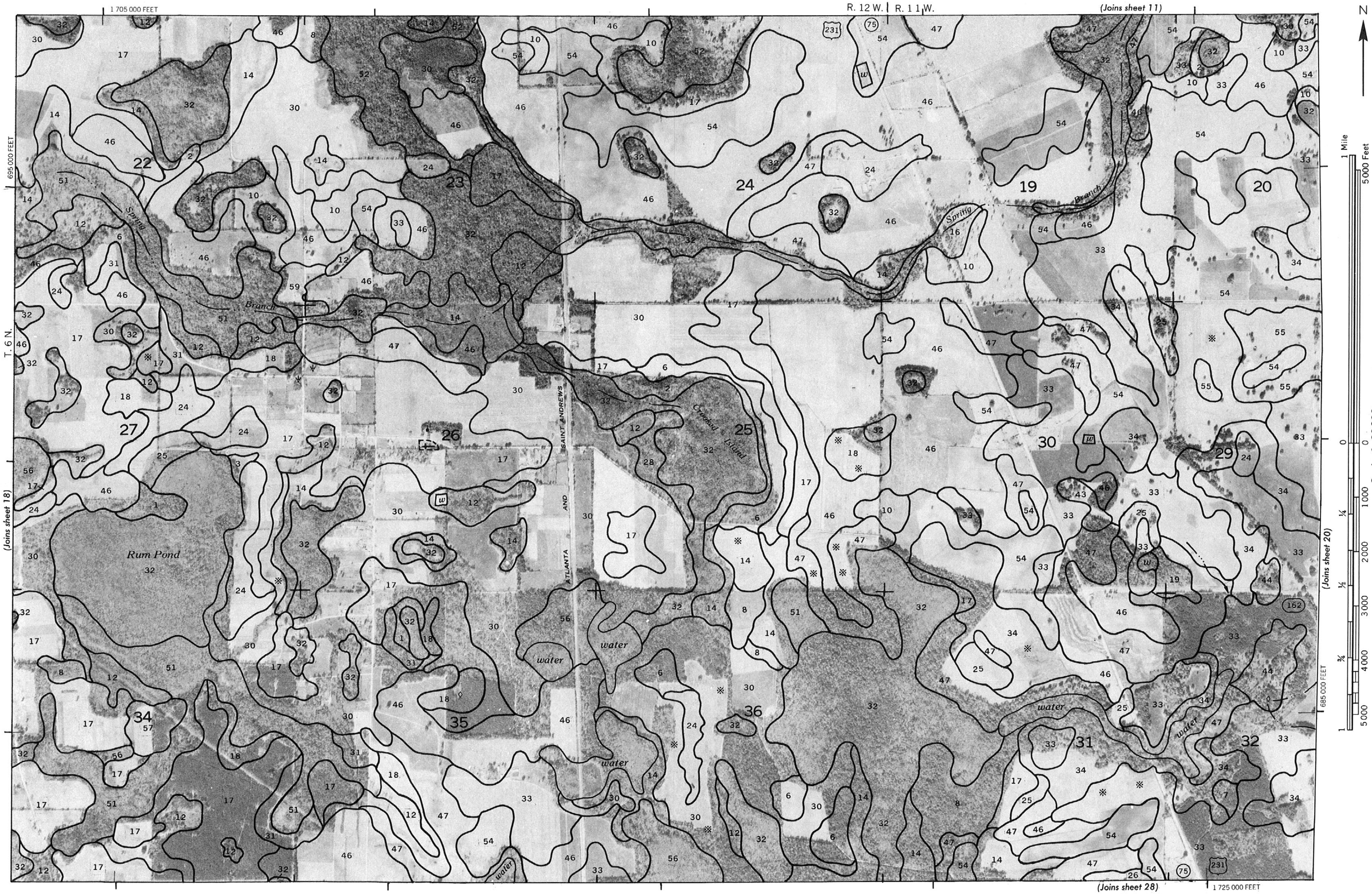
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

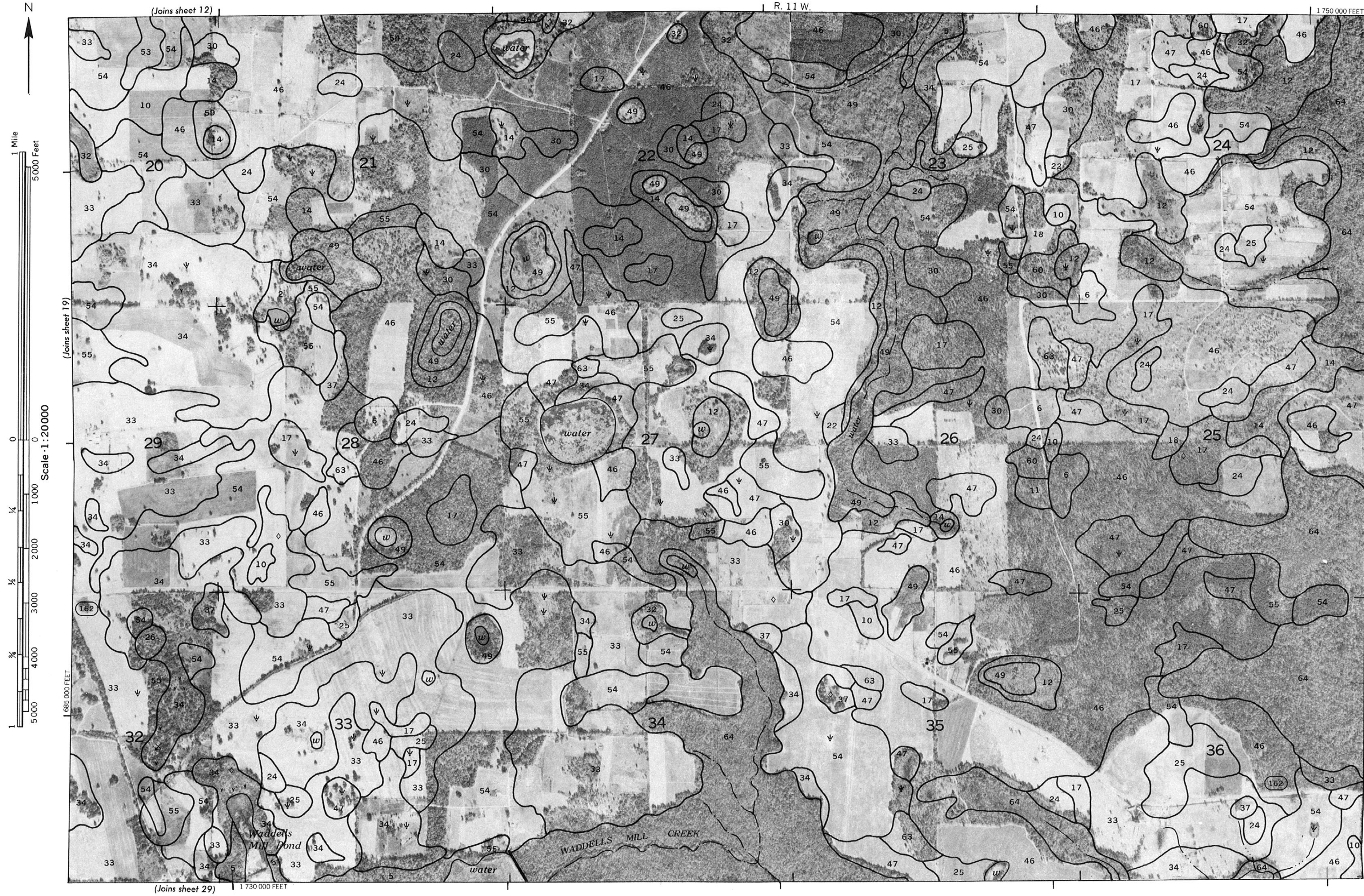
JACKSON COUNTY, FLORIDA NO. 18

19

JACKSON COUNTY, FLORIDA NO. 19

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.





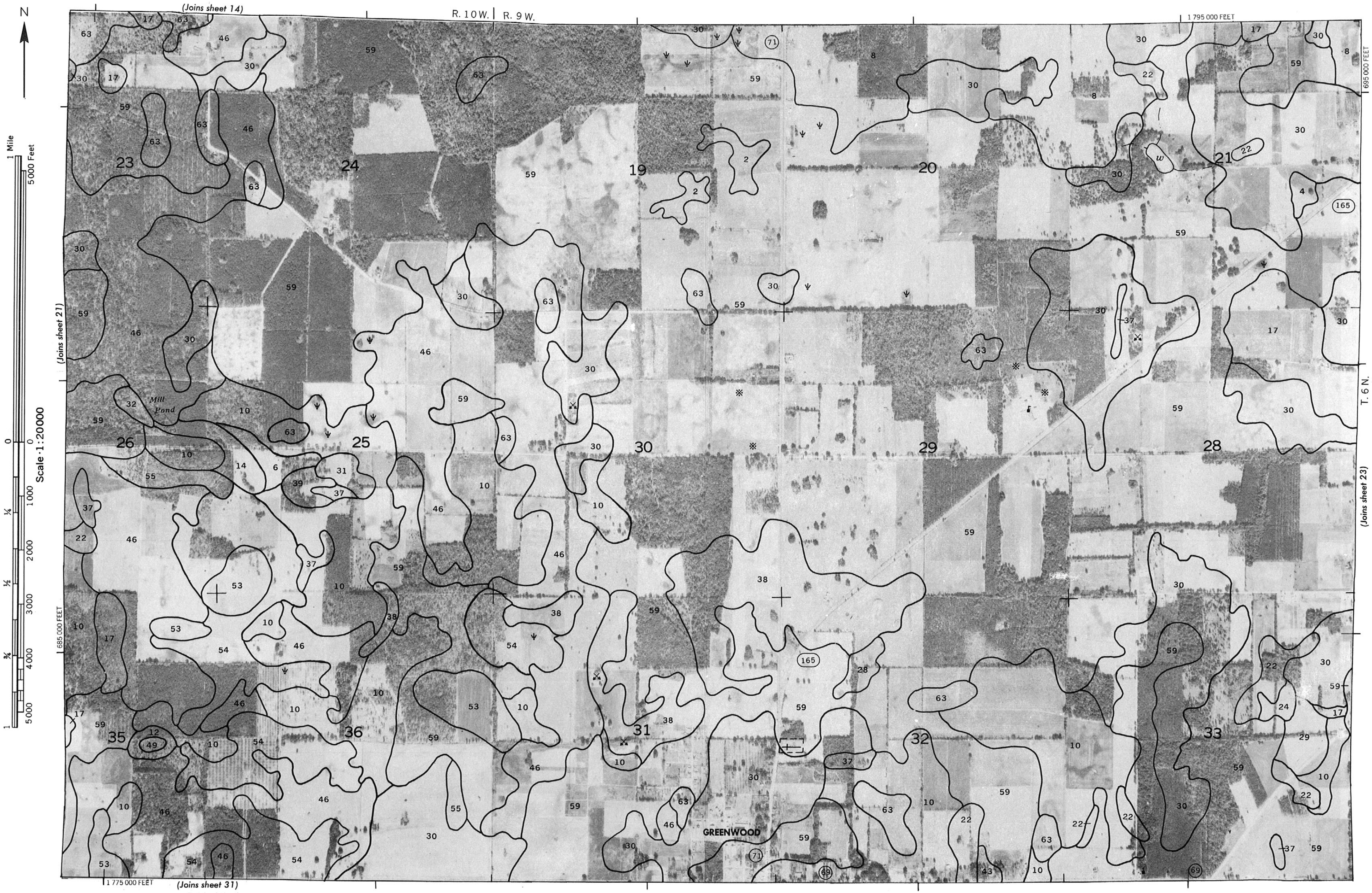
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 20

JACKSON COUNTY, FLORIDA NO. 21

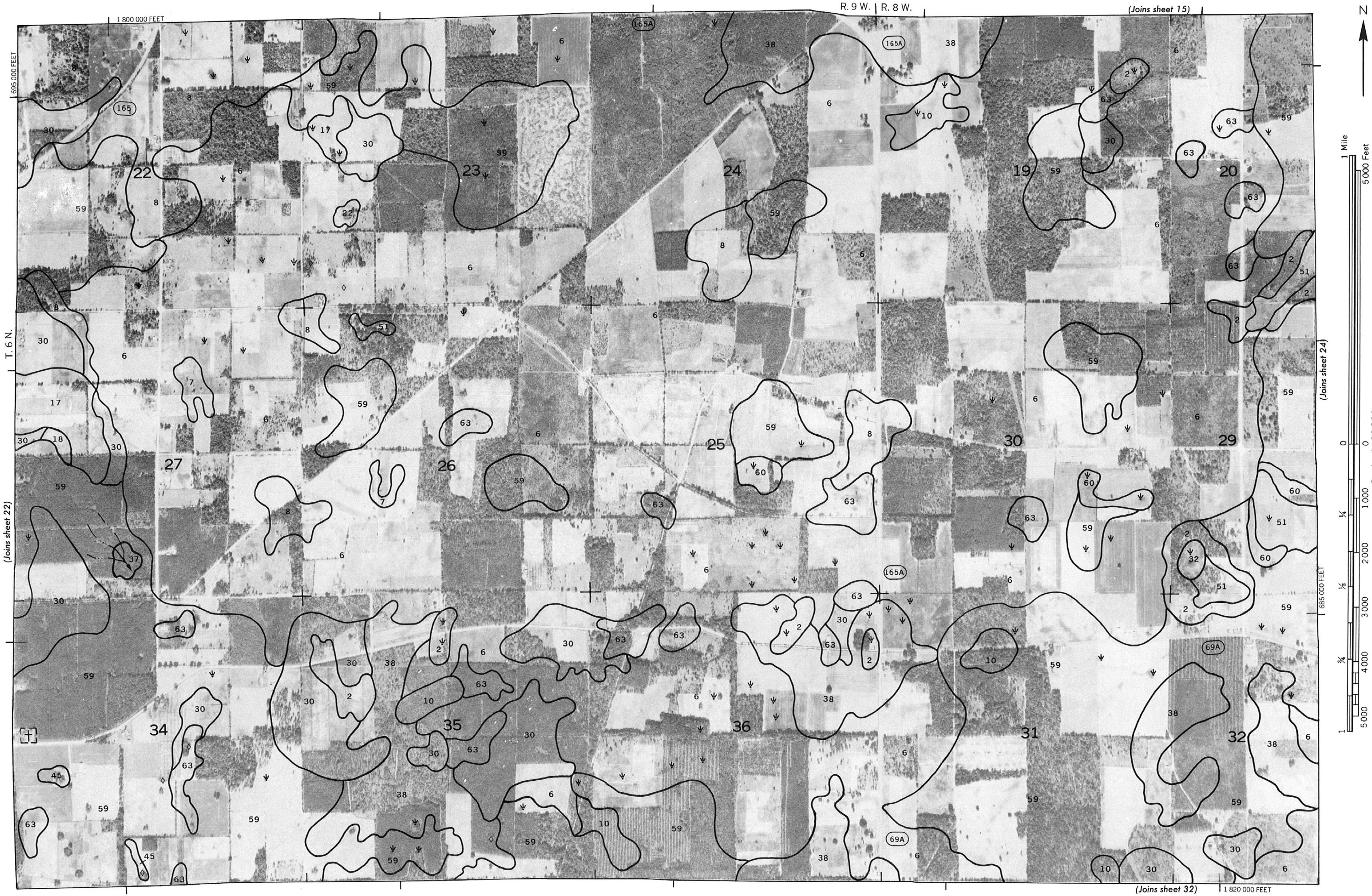
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA — SHEET NUMBER 22



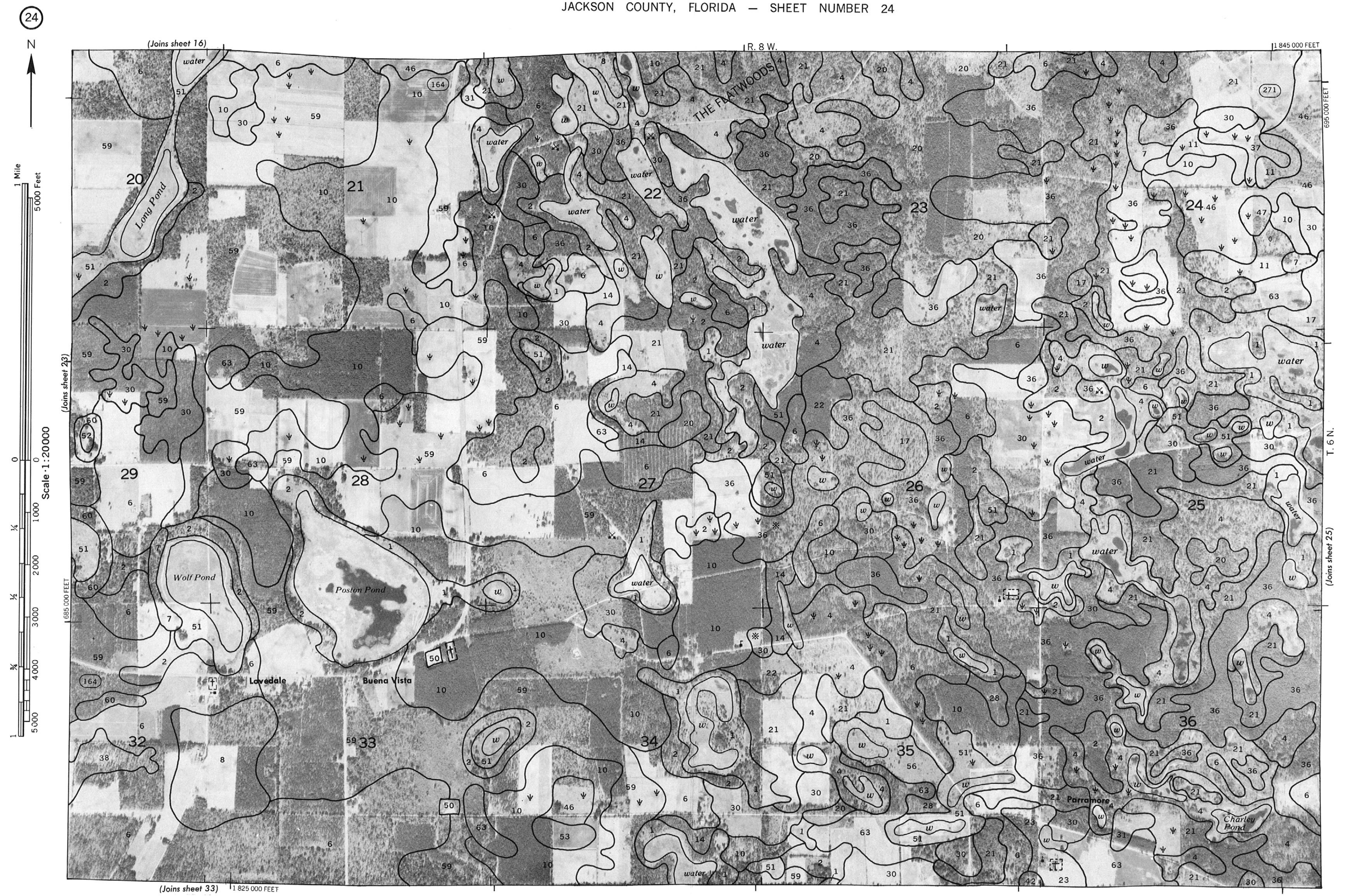
This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 22



JACKSON COUNTY, FLORIDA NO. 23

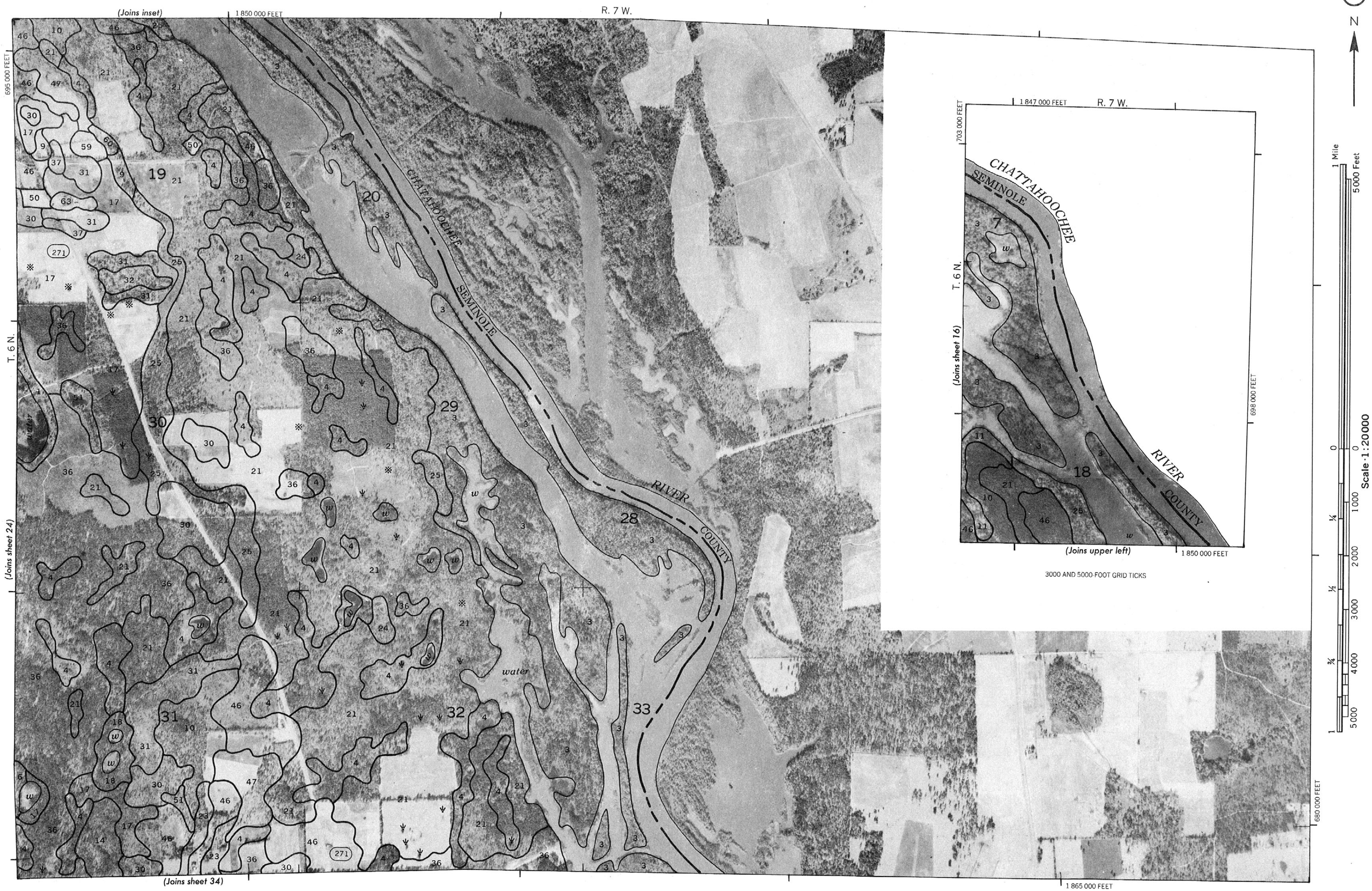
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

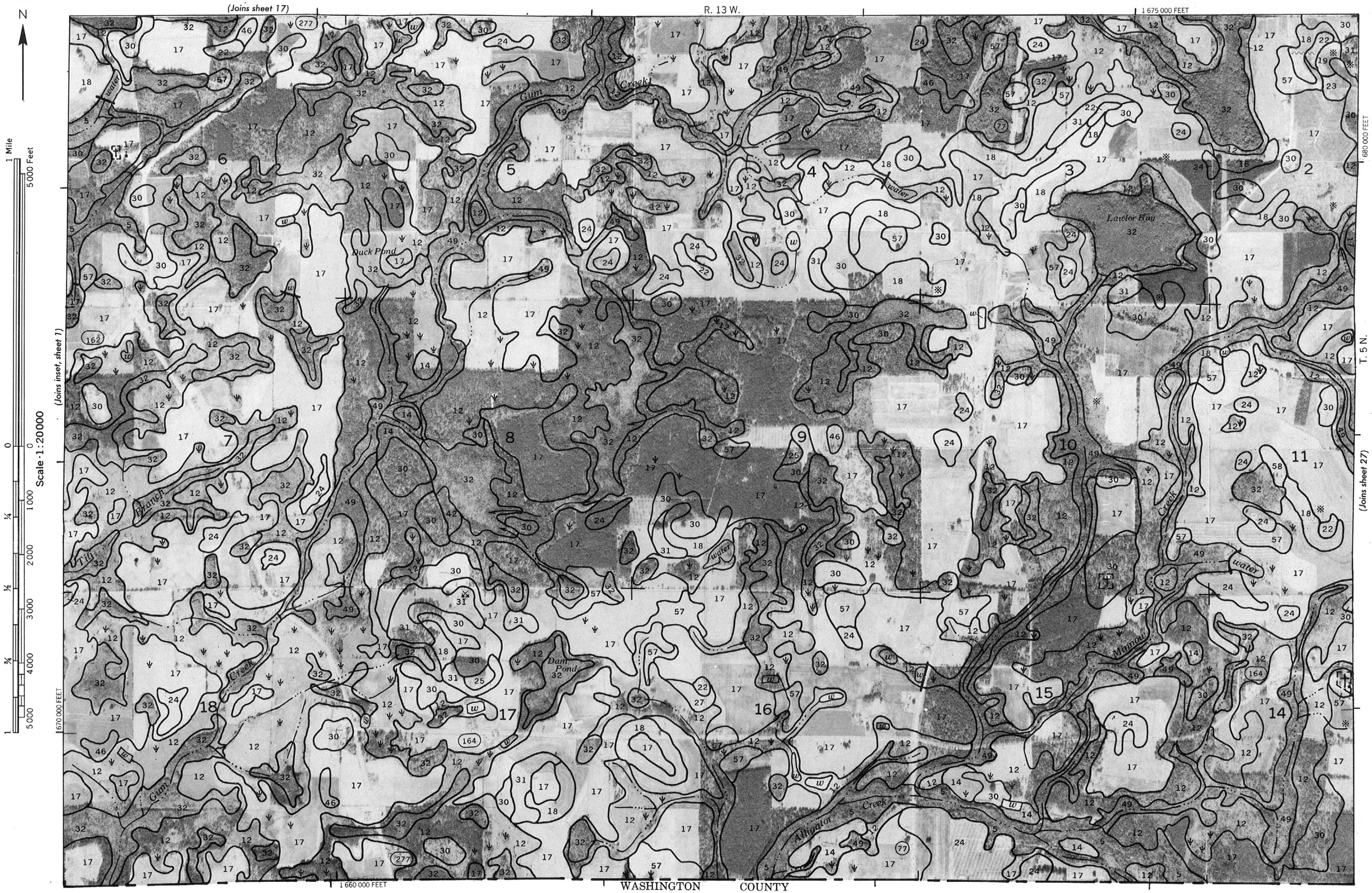


This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

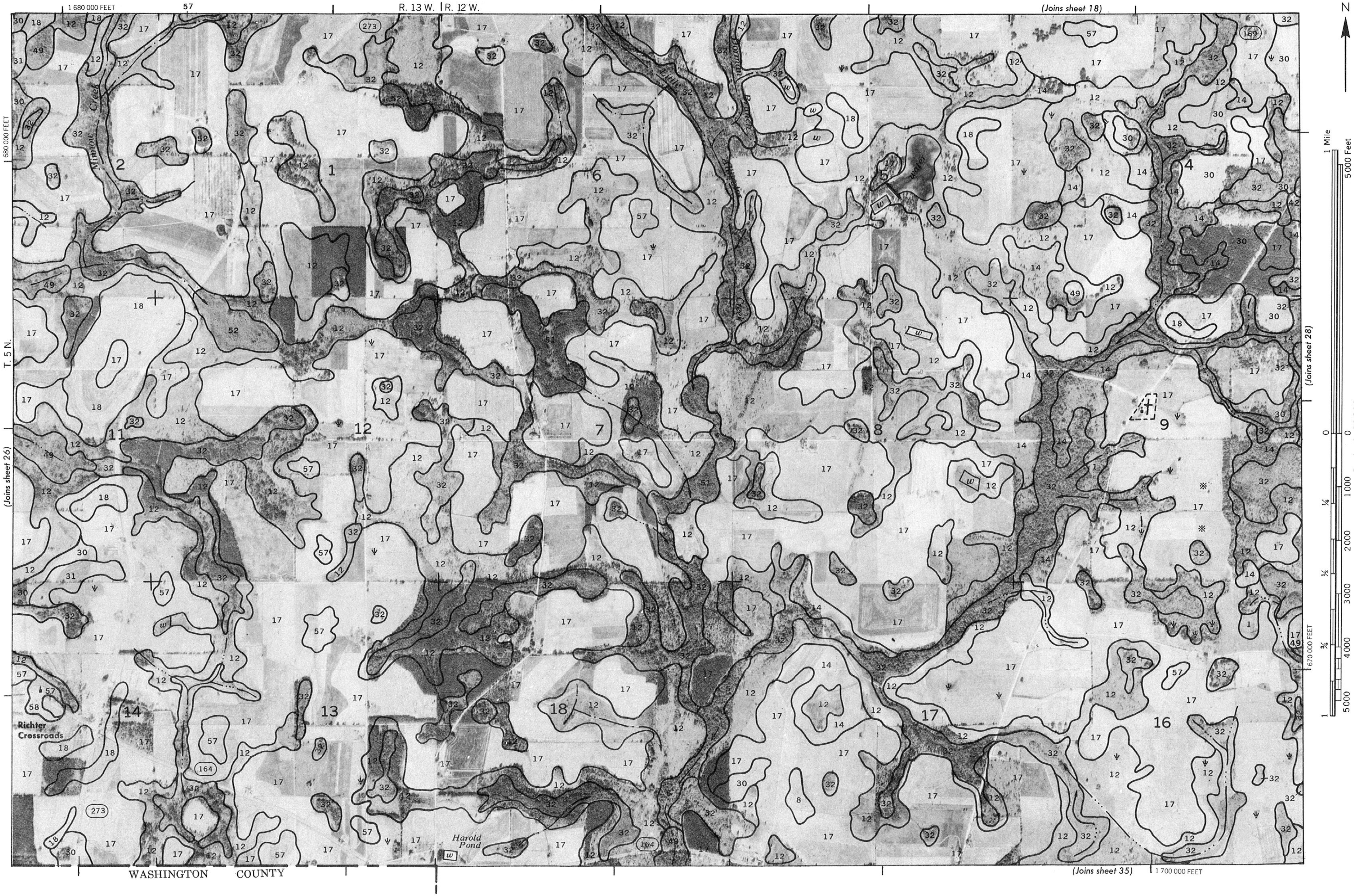
JACKSON COUNTY, FLORIDA NO. 25

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



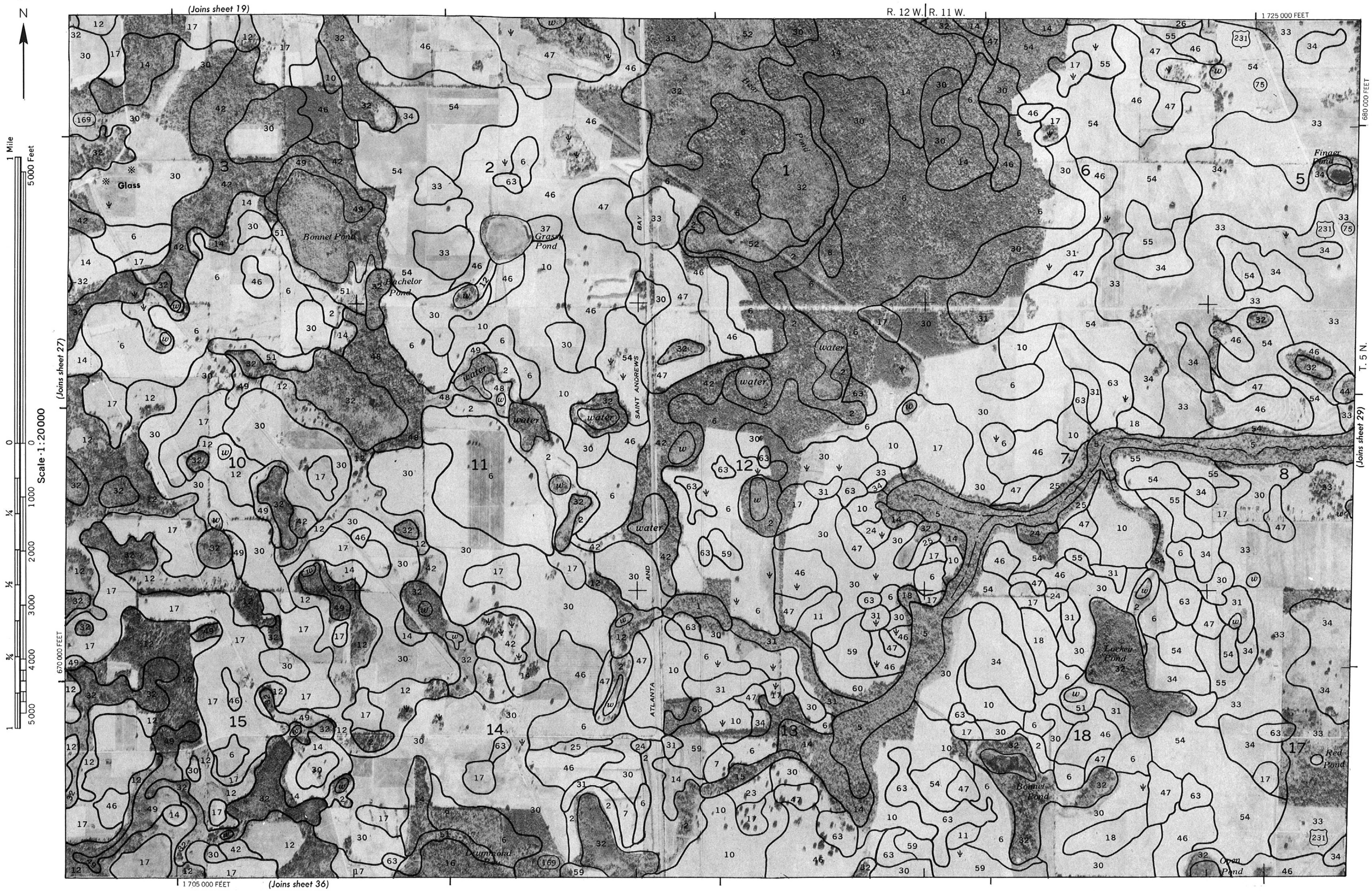


This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



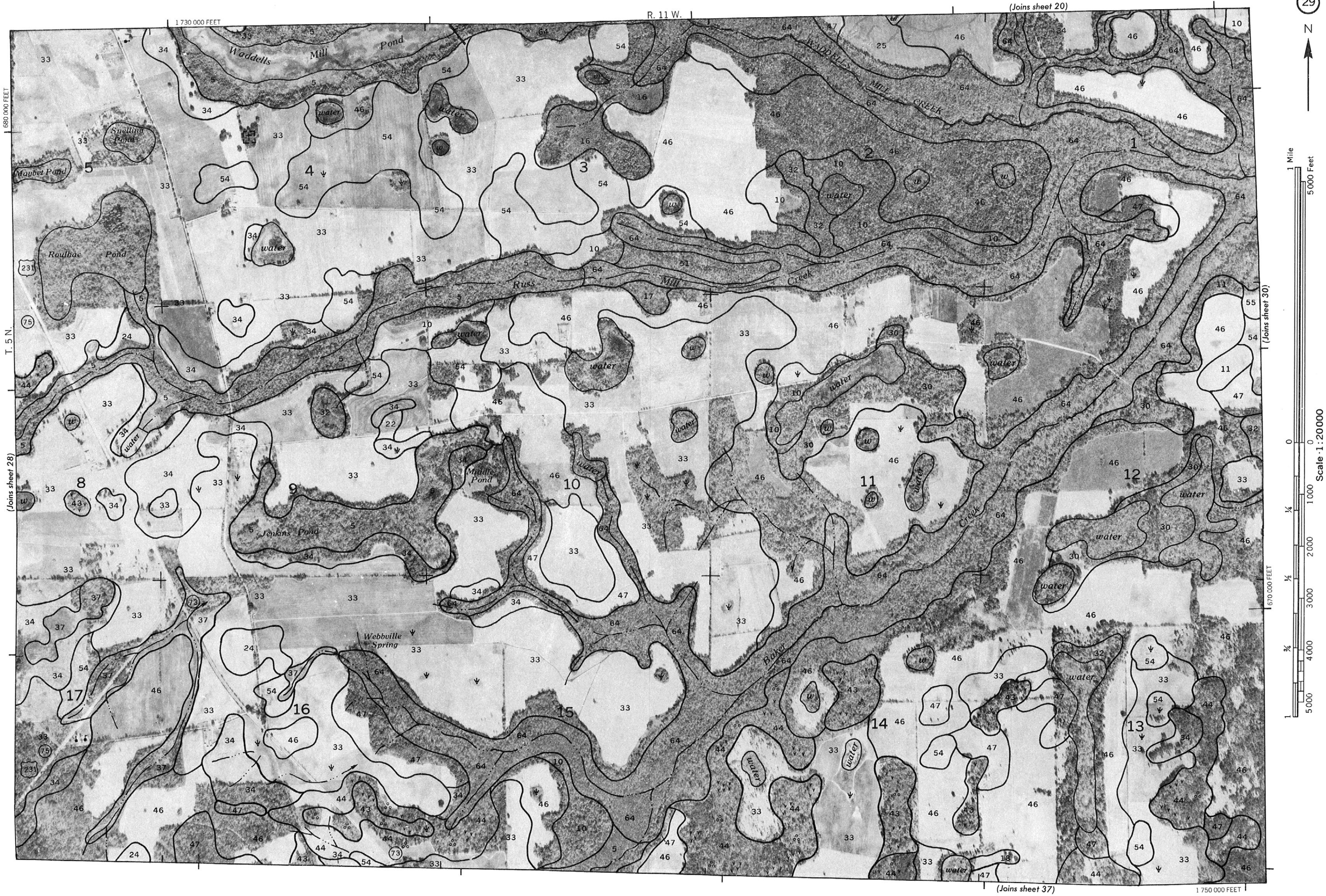
JACKSON COUNTY, FLORIDA NO. 27

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

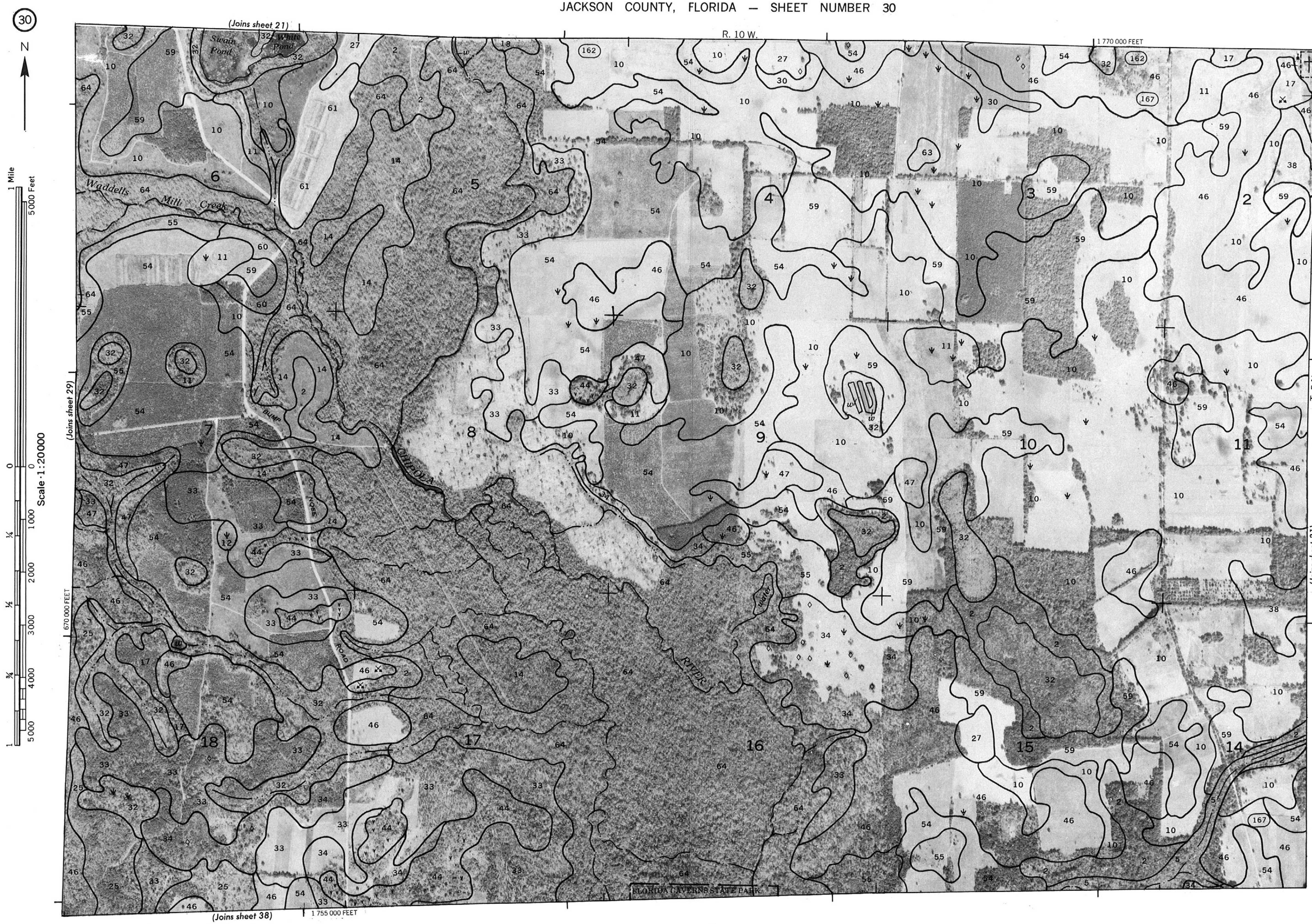
29



JACKSON COUNTY, FLORIDA NO. 29

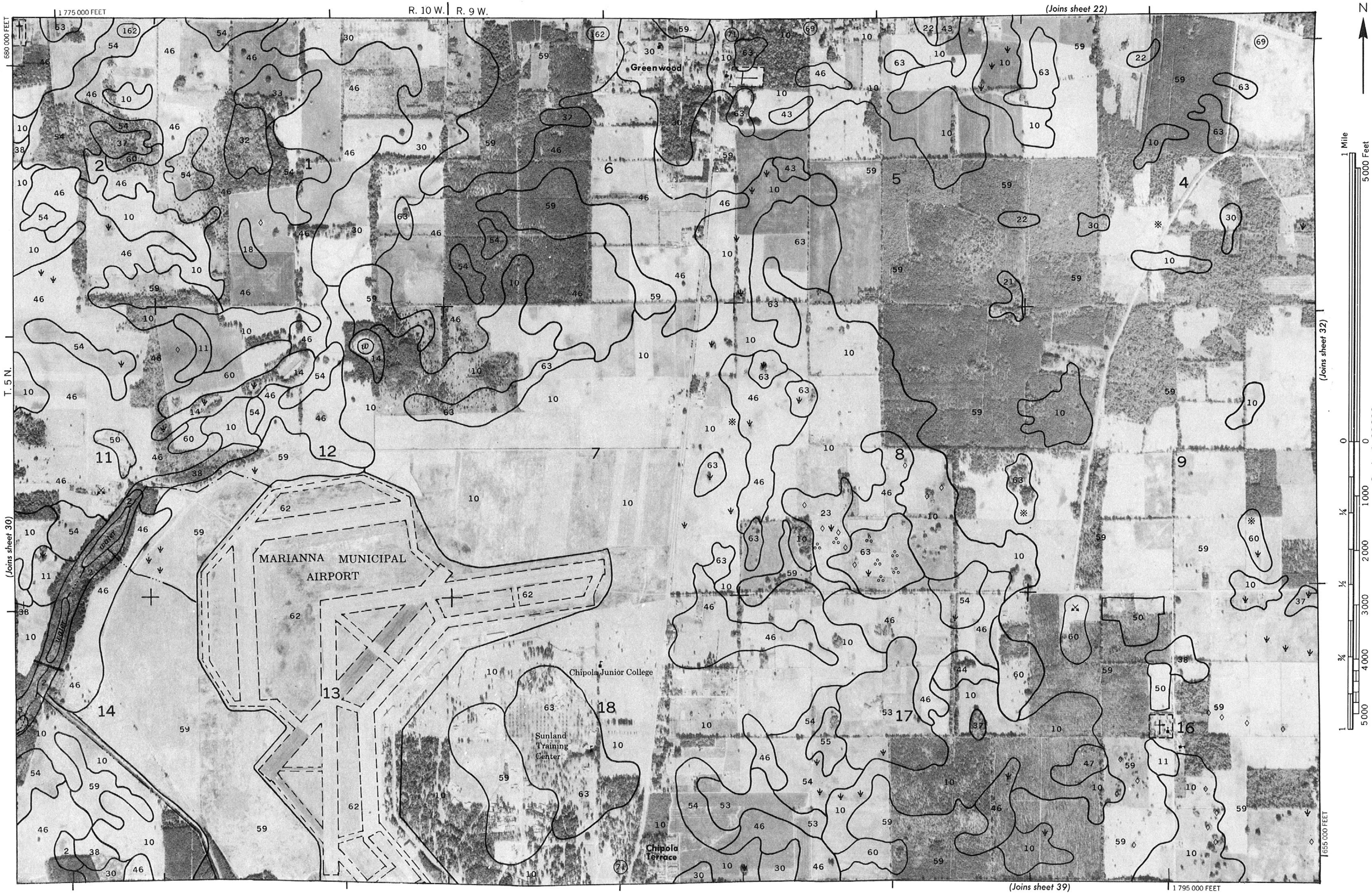
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA — SHEET NUMBER 30



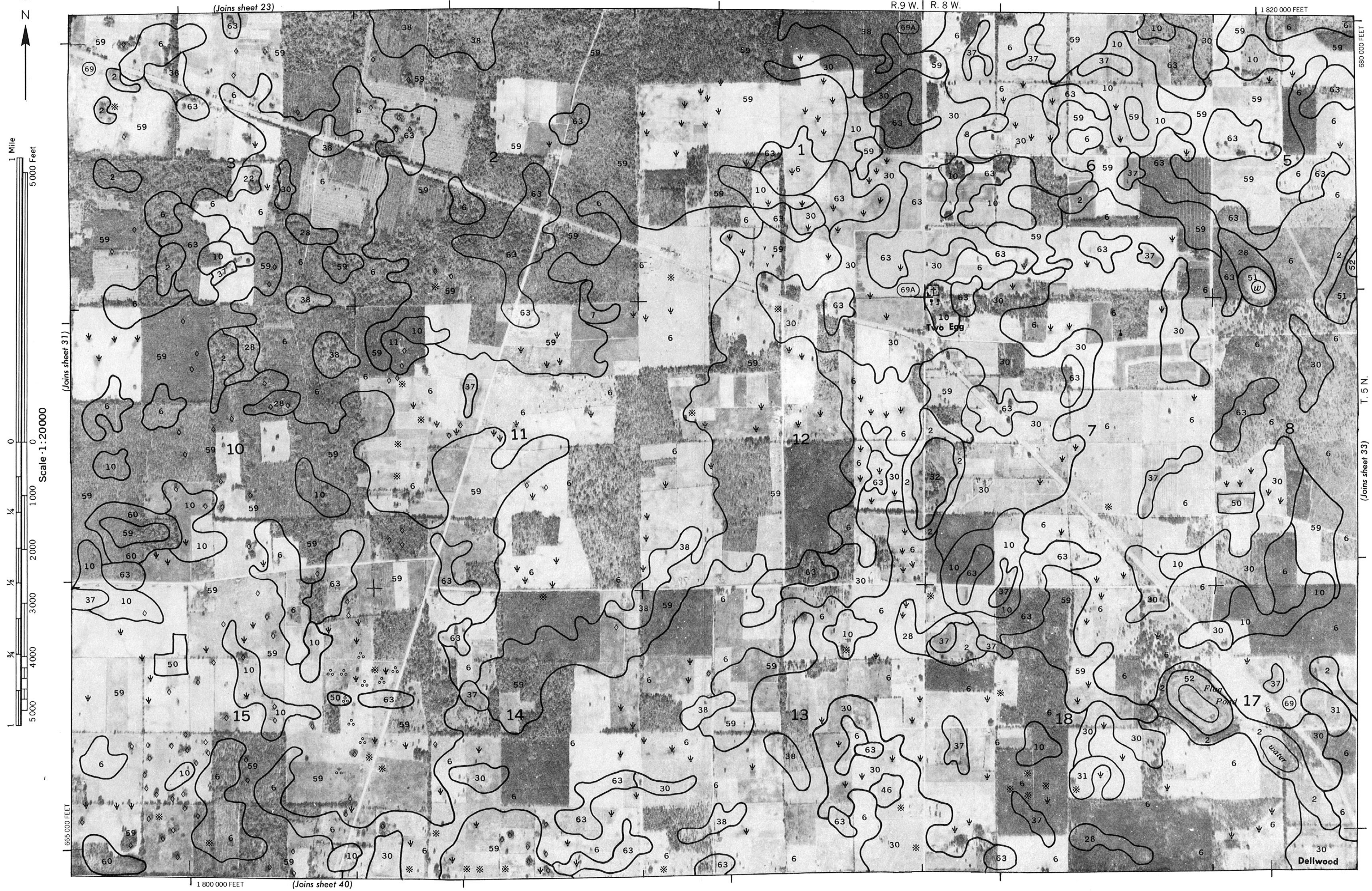
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 30



JACKSON COUNTY, FLORIDA NO. 31

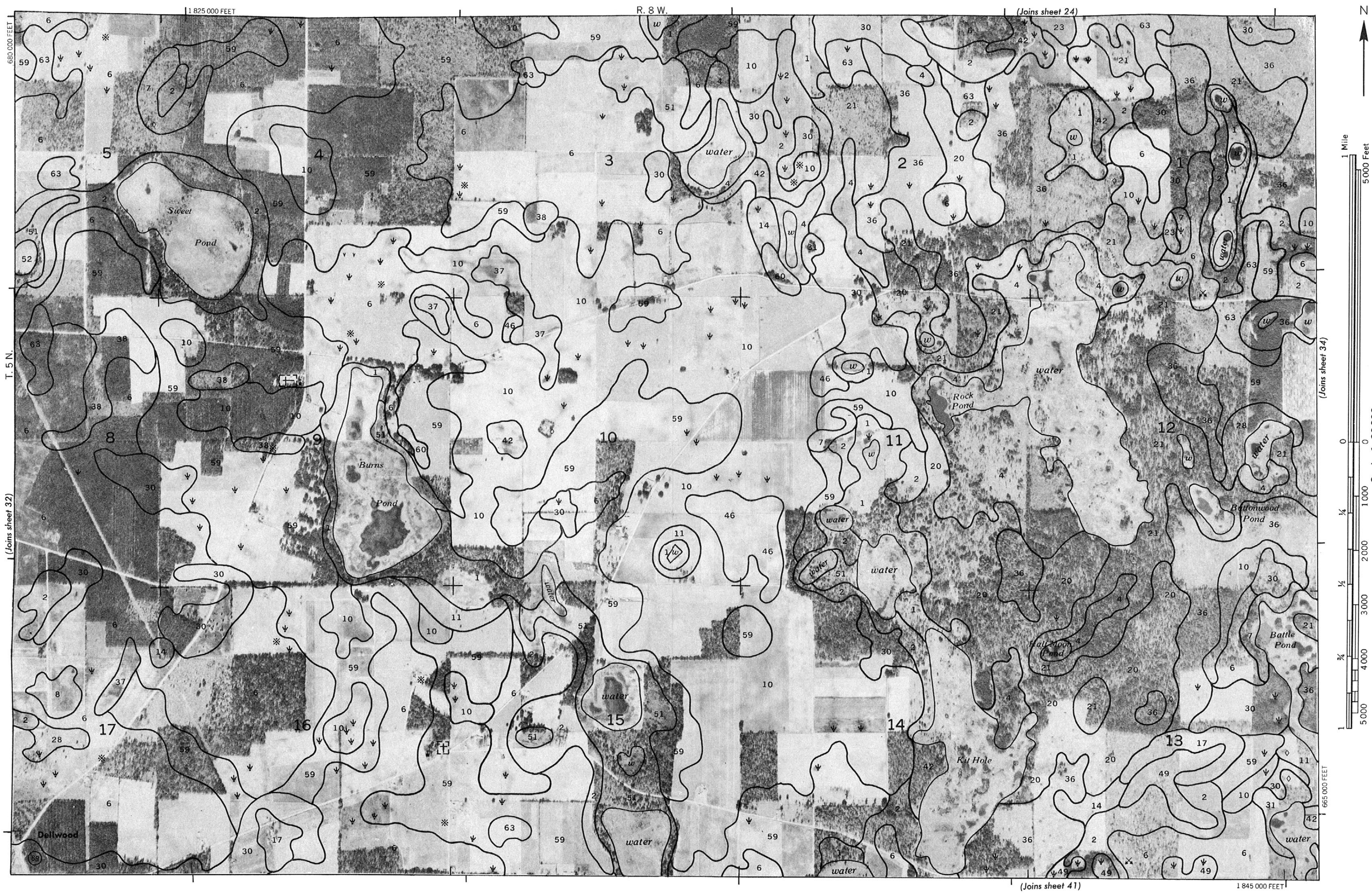
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 33

This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



JACKSON COUNTY, FLORIDA — SHEET NUMBER 34

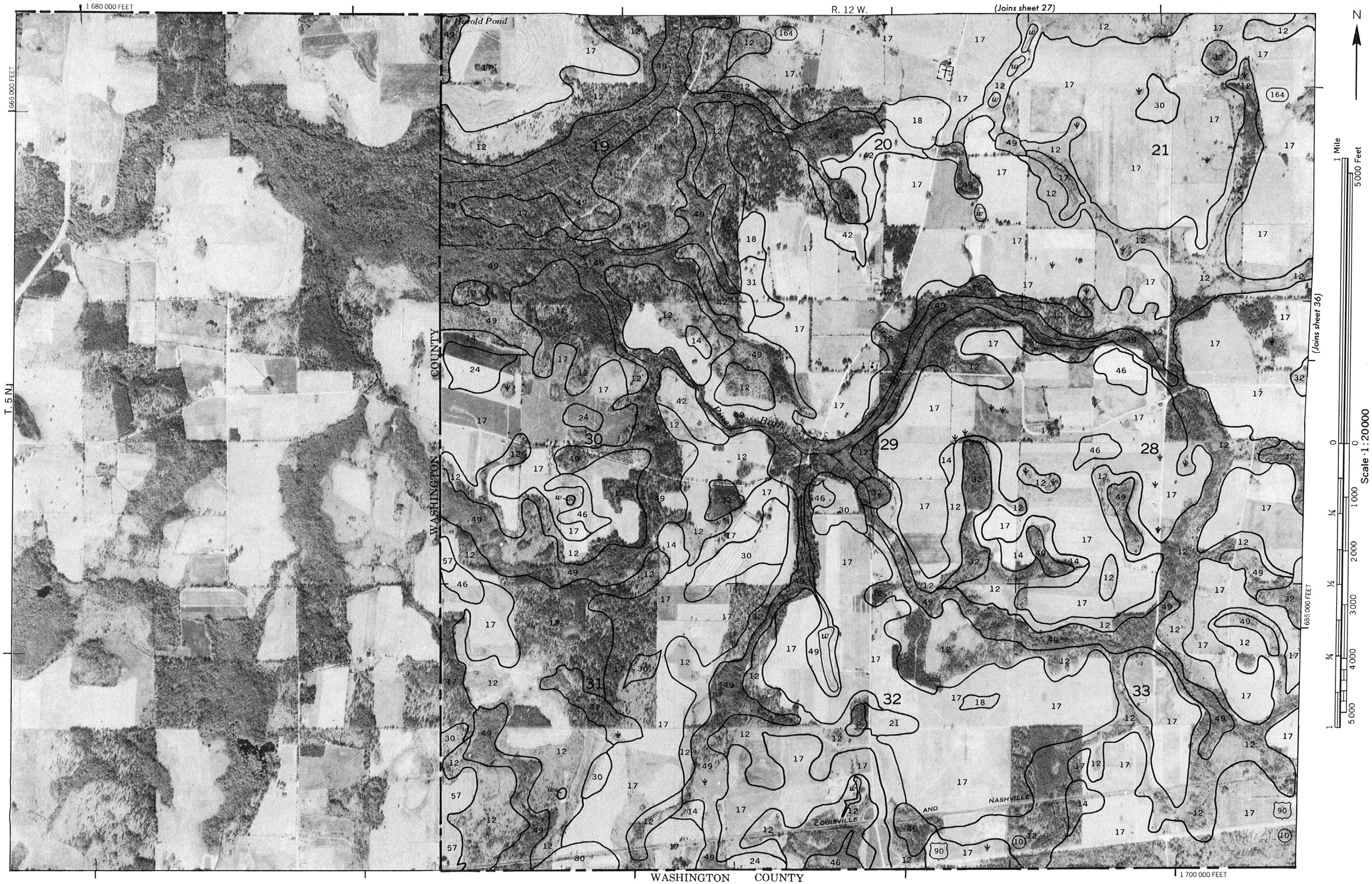
N

Scale 1:20000

1 Mile
5000 Feet
0 ¼ ½ ¾ 1
0 1000 2000 3000 4000 5000

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 34



JACKSON COUNTY, FLORIDA NO. 35

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

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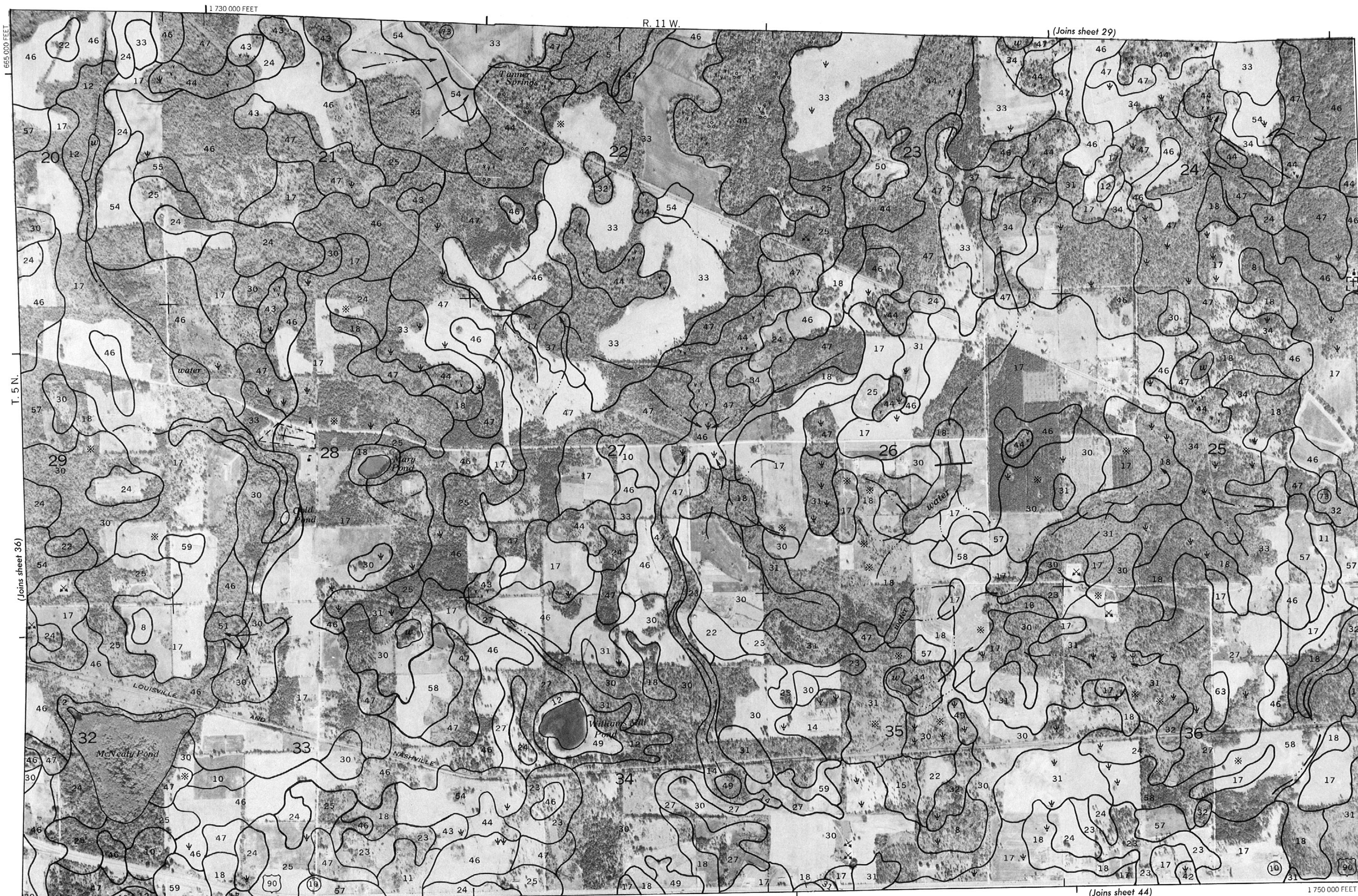
JACKSON COUNTY, FLORIDA NO. 36

37

N



1 Mile
5000 Feet

Scale 1:20000

0 1000 2000 3000 4000 5000

0 ¼ ½ ¾ 1

JACKSON COUNTY, FLORIDA NO. 37

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

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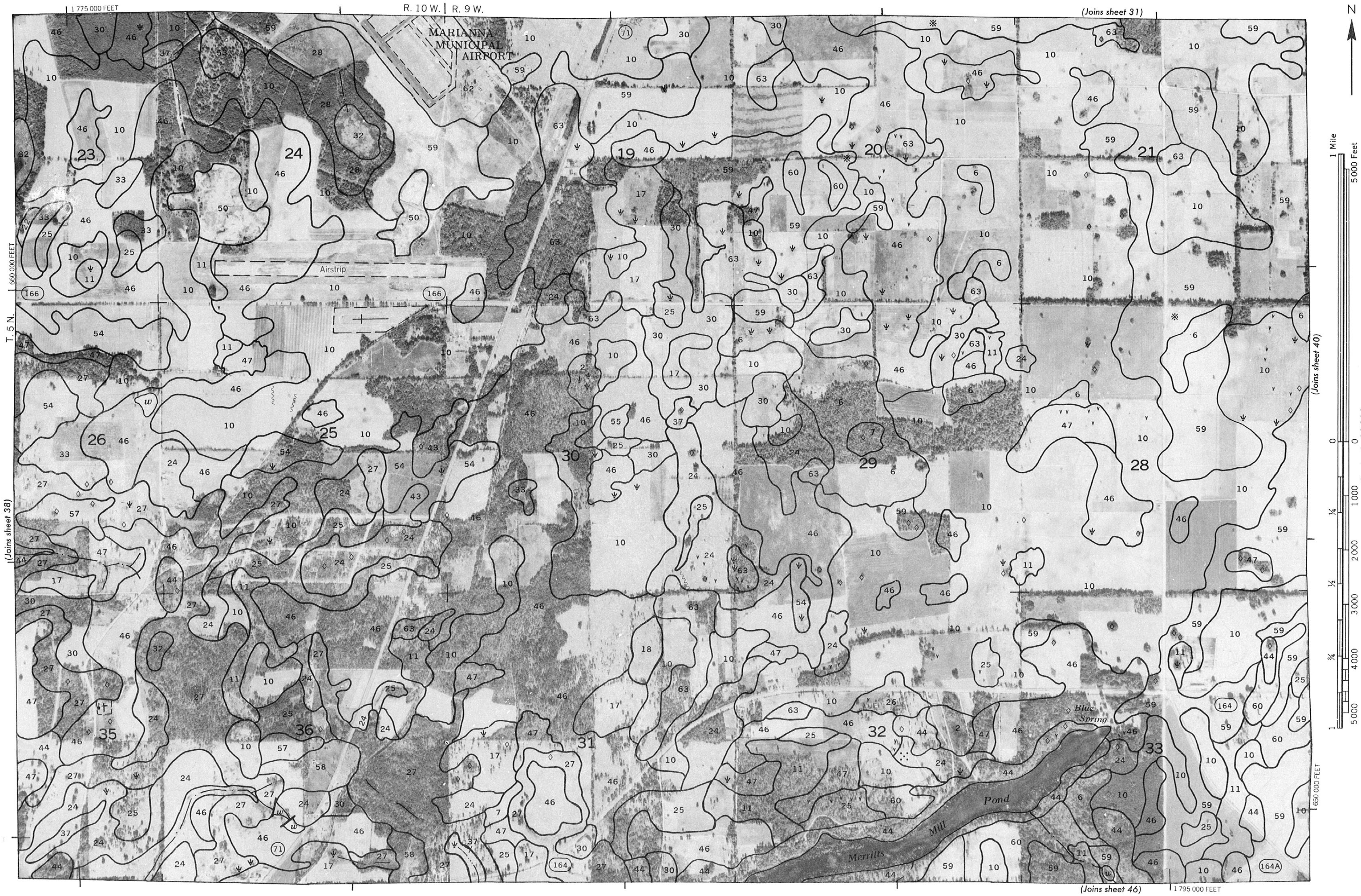
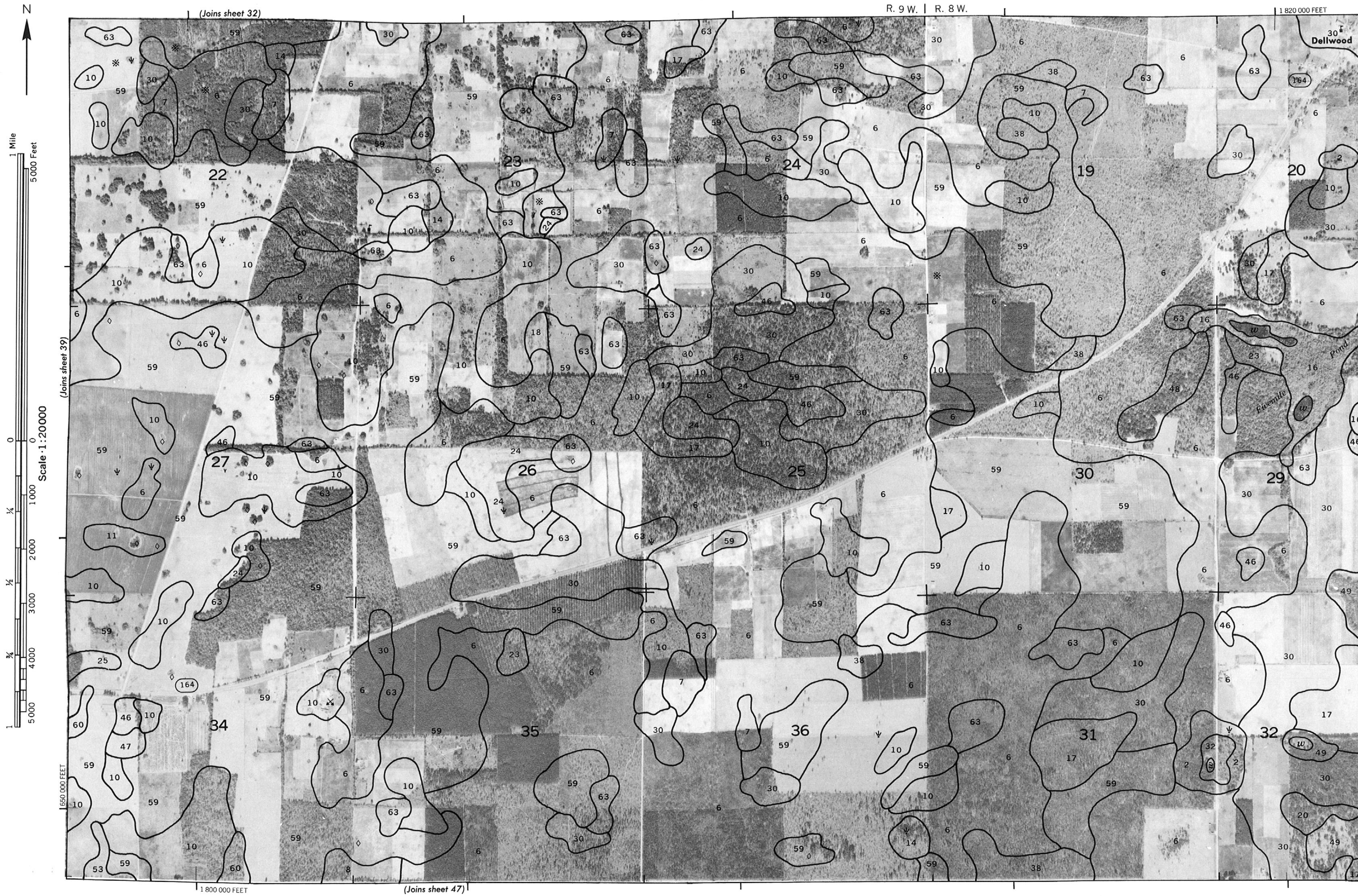
JACKSON COUNTY, FLORIDA NO. 39

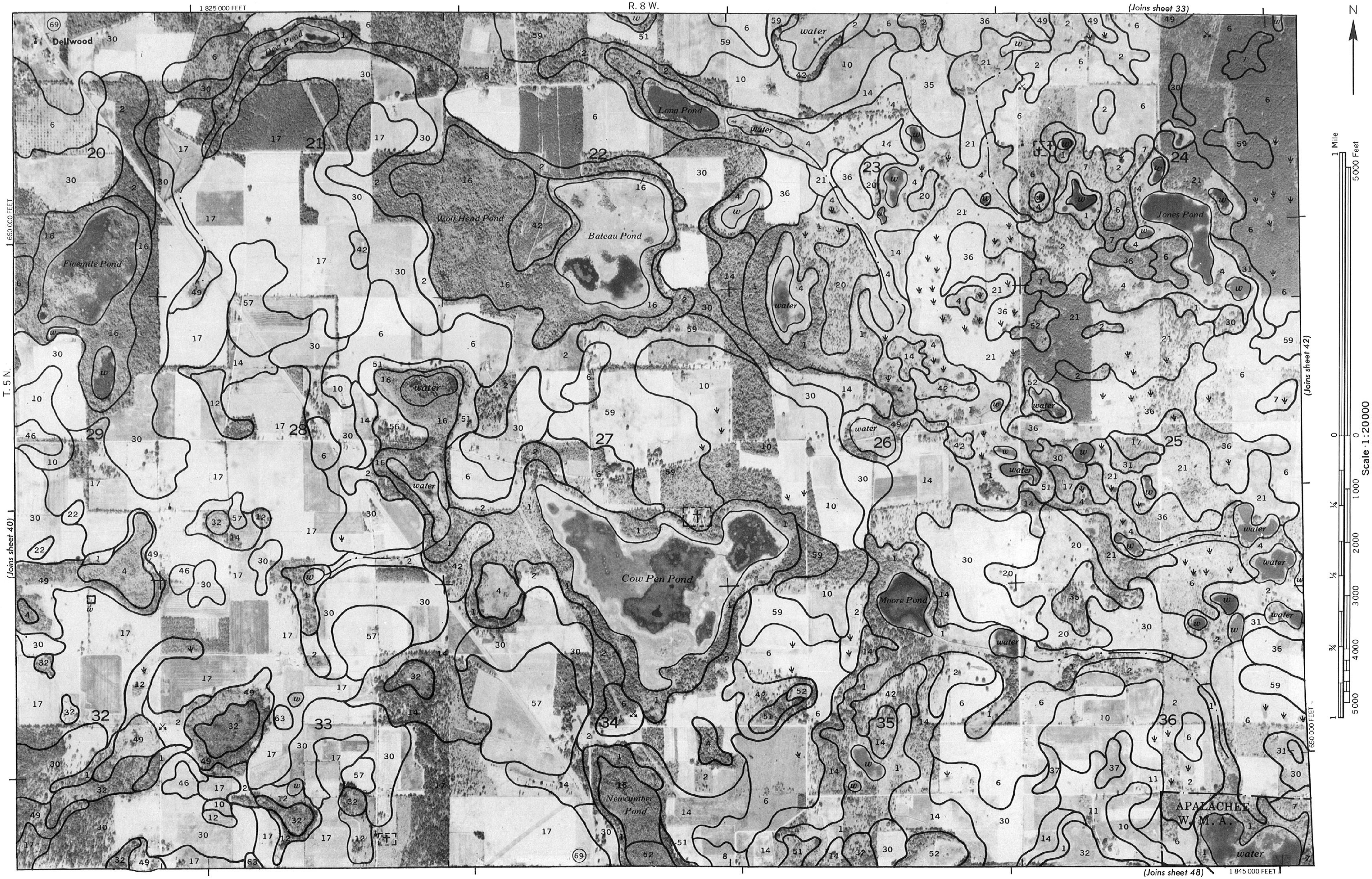
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



JACKSON COUNTY, FLORIDA — SHEET NUMBER 40

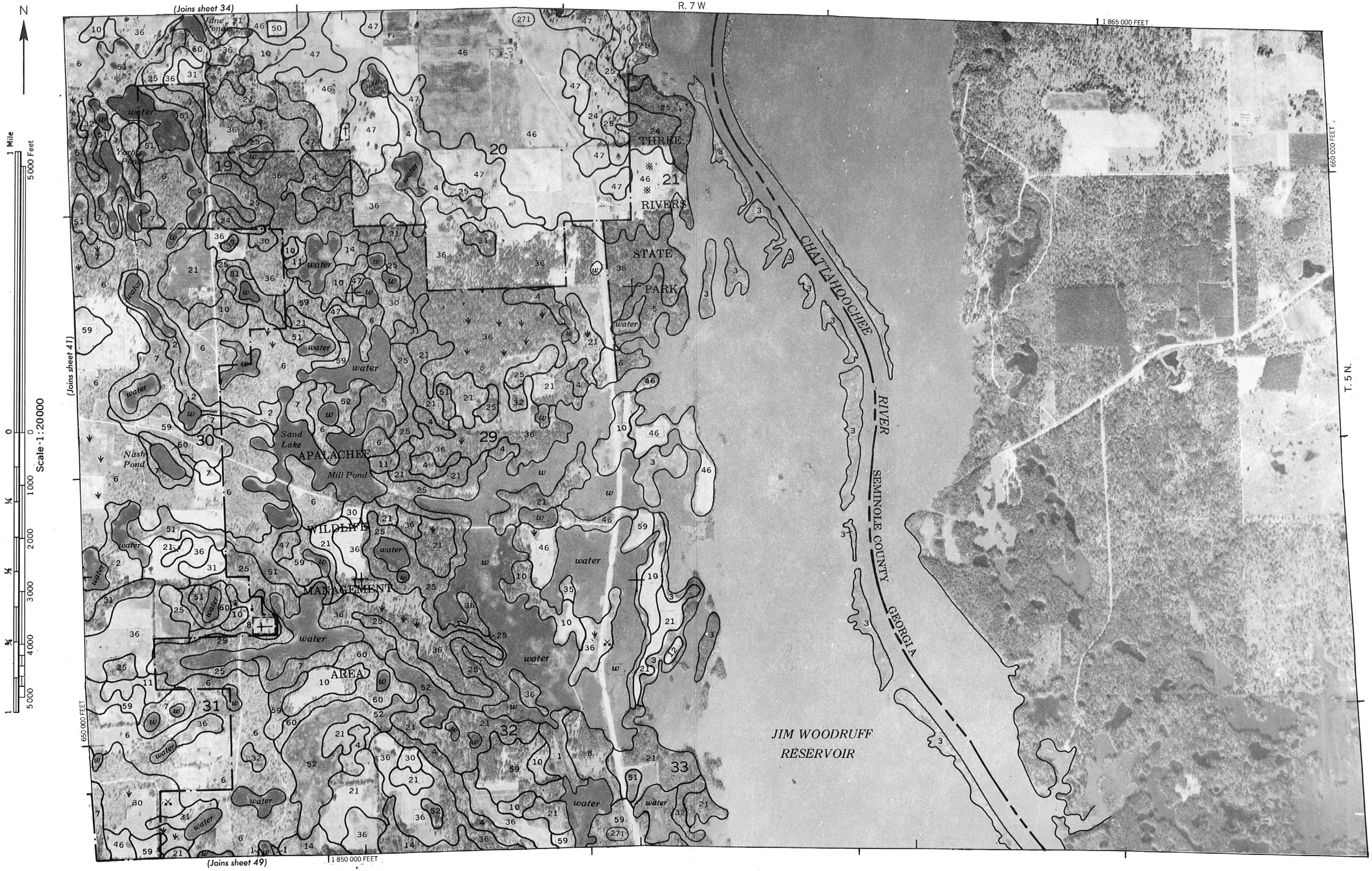


This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



JACKSON COUNTY, FLORIDA NO. 41

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

43

JACKSON COUNTY, FLORIDA NO. 43

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

44

N

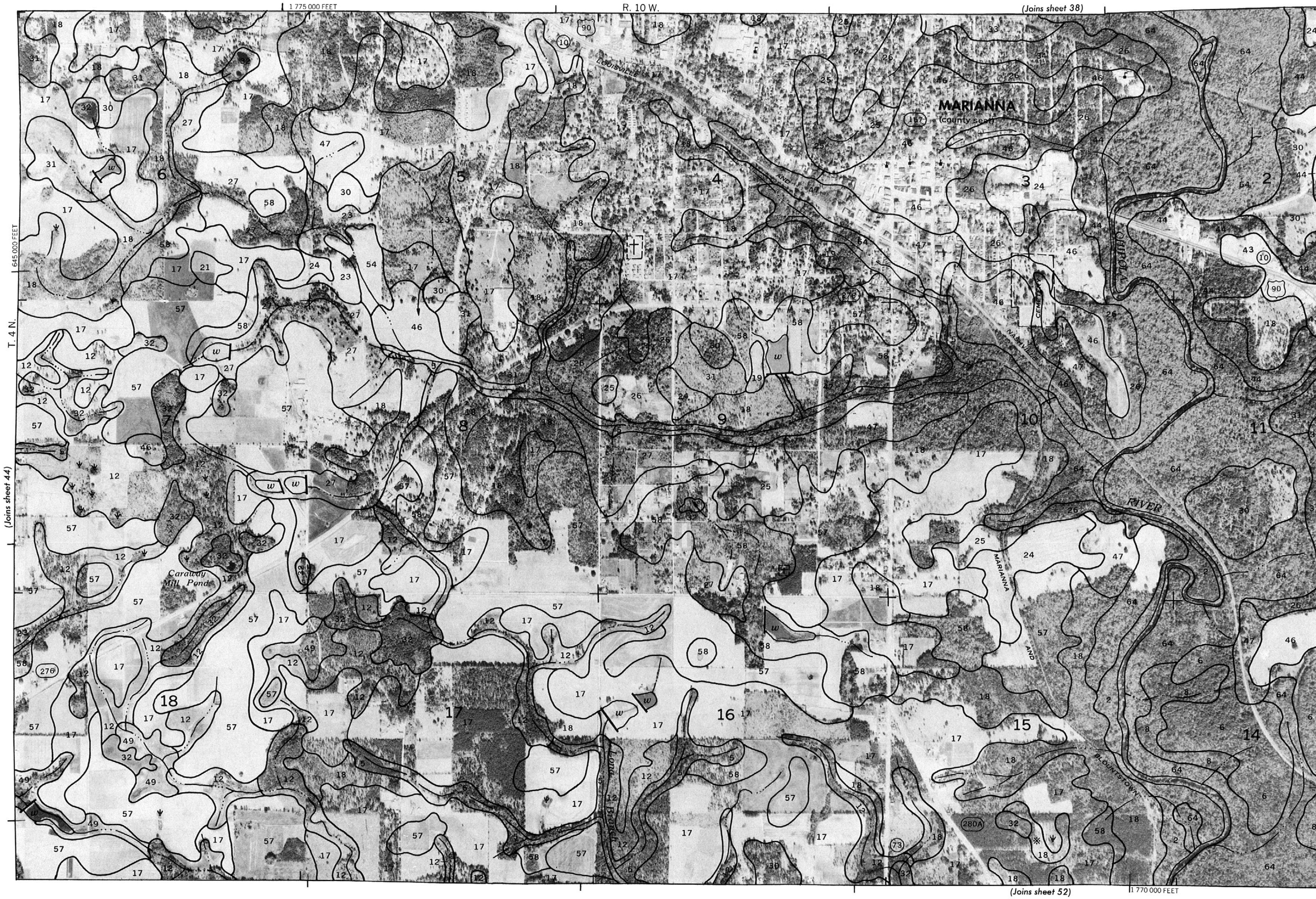
Scale 1:20000

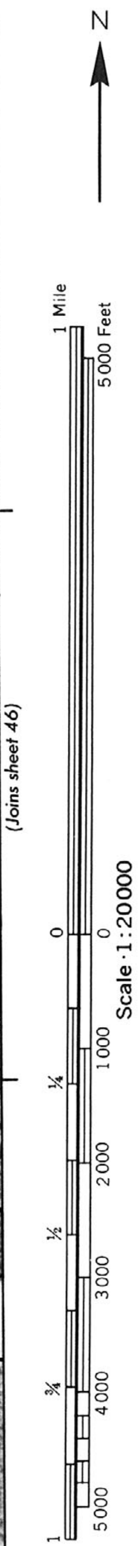
1 Mile
0 ¼ ½ ¾ 1

5000 Feet
0 1000 2000 3000 4000 5000

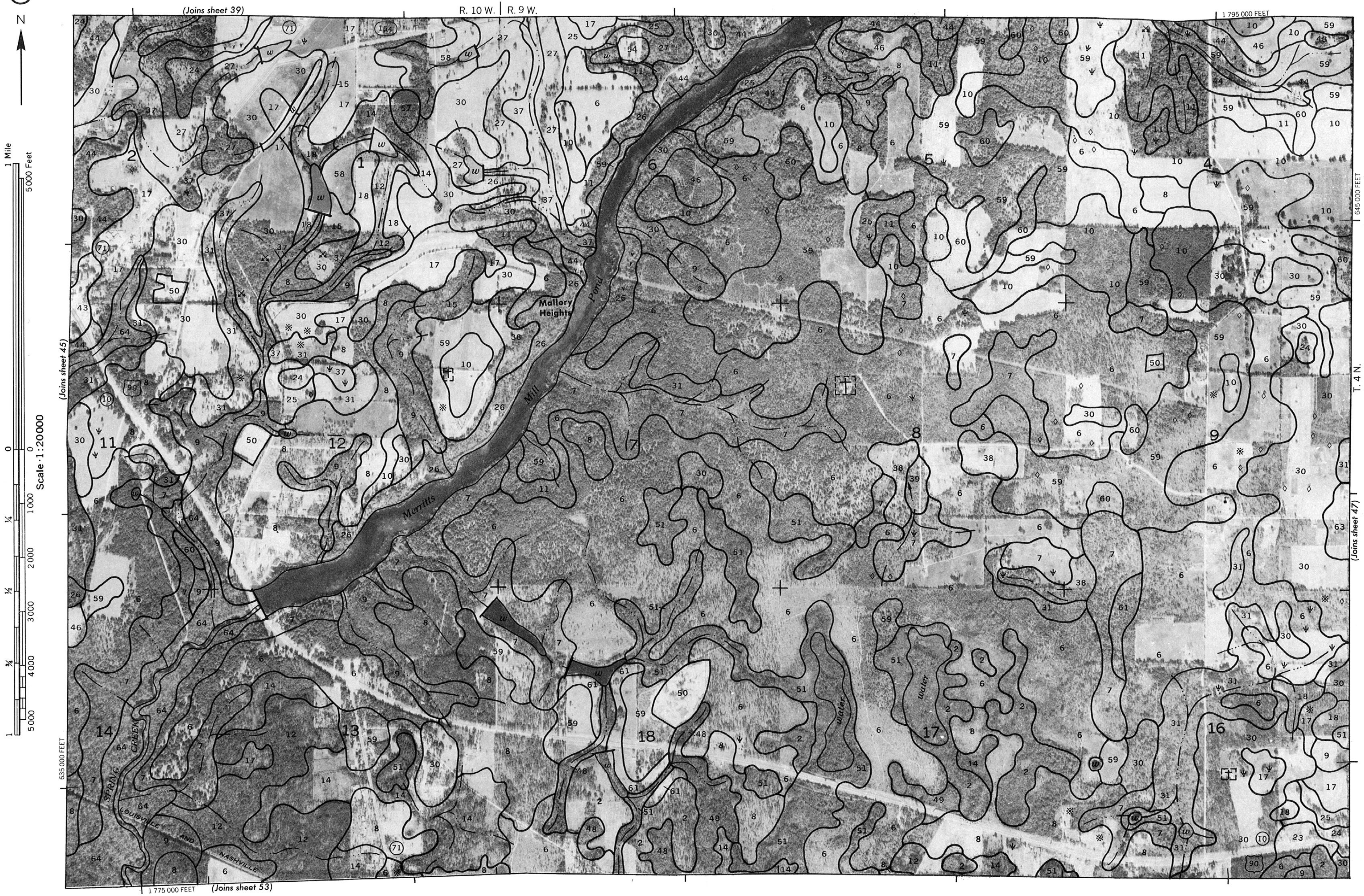
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



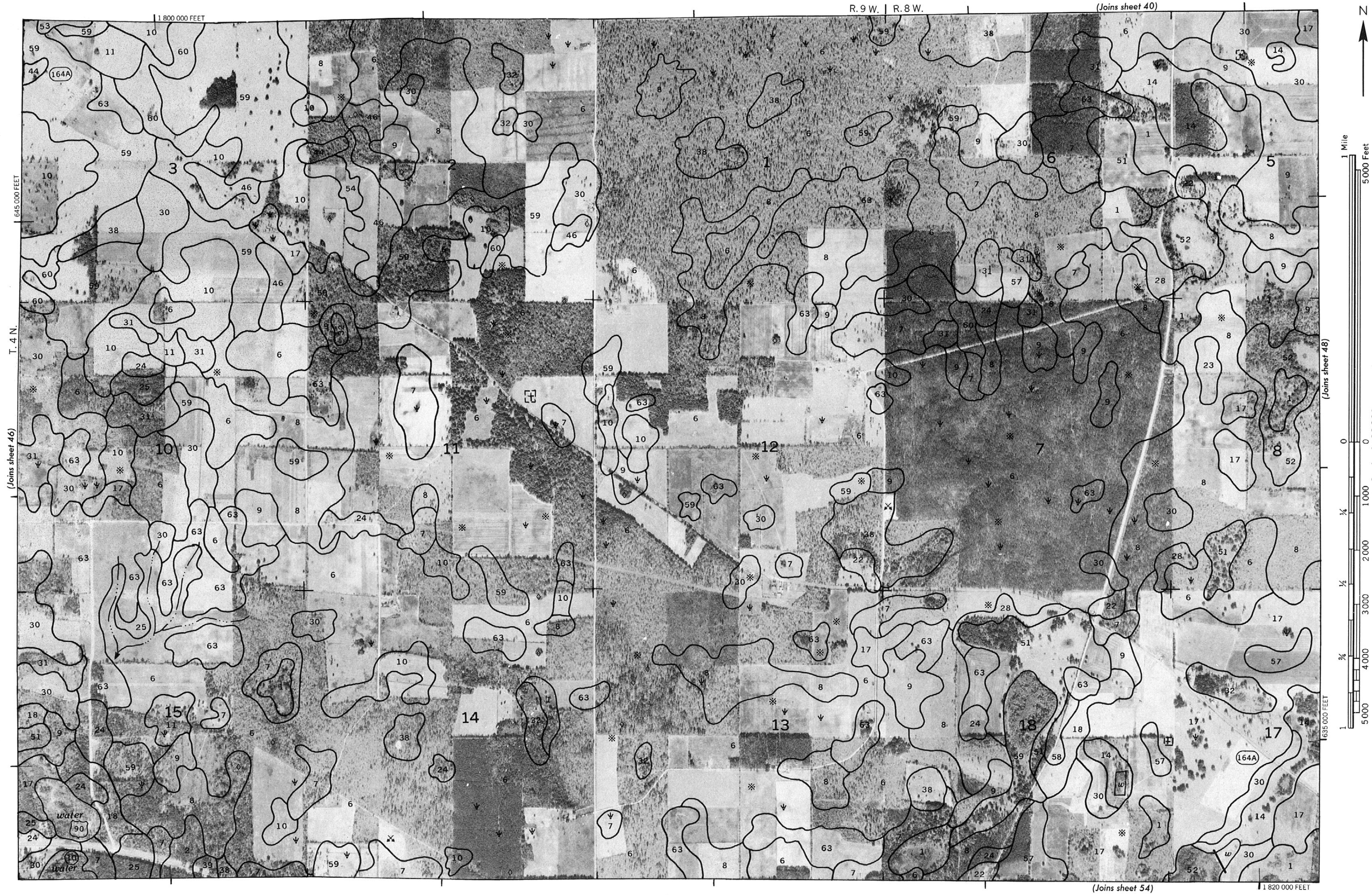


JACKSON COUNTY, FLORIDA — SHEET NUMBER 46

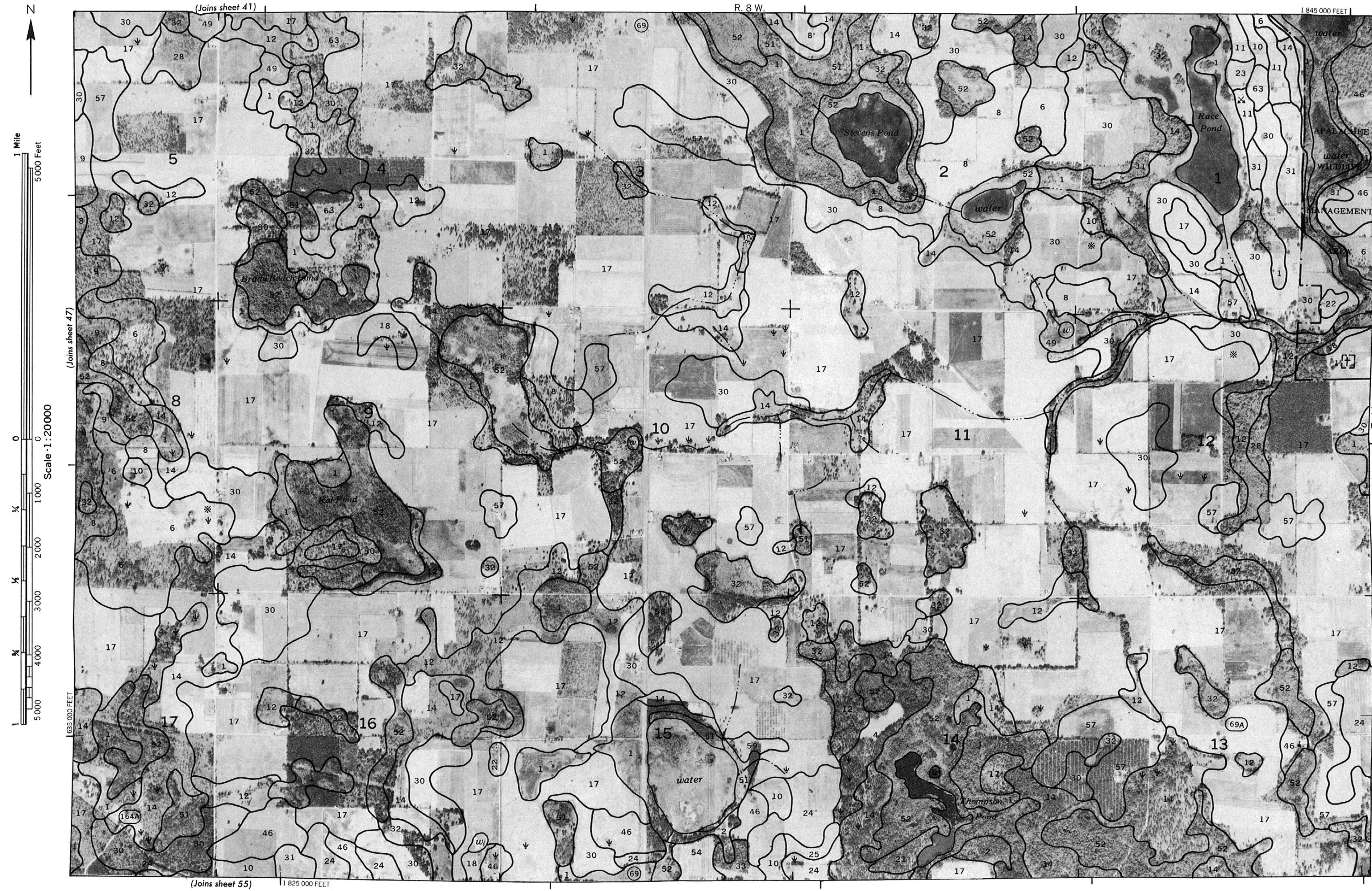


This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned

JACKSON COUNTY, FLORIDA NO. 46



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

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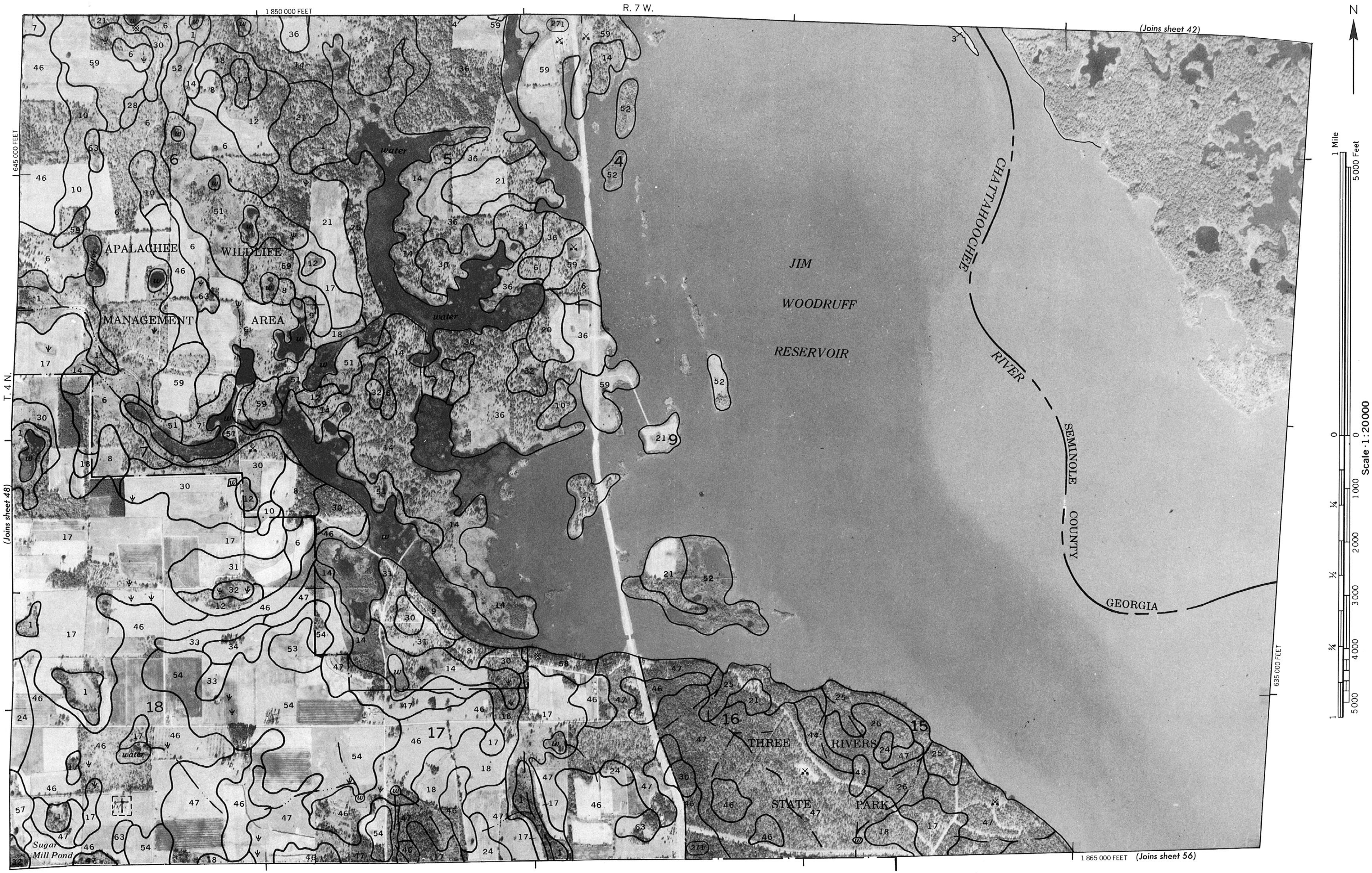


50

N

Scale 1:20 000

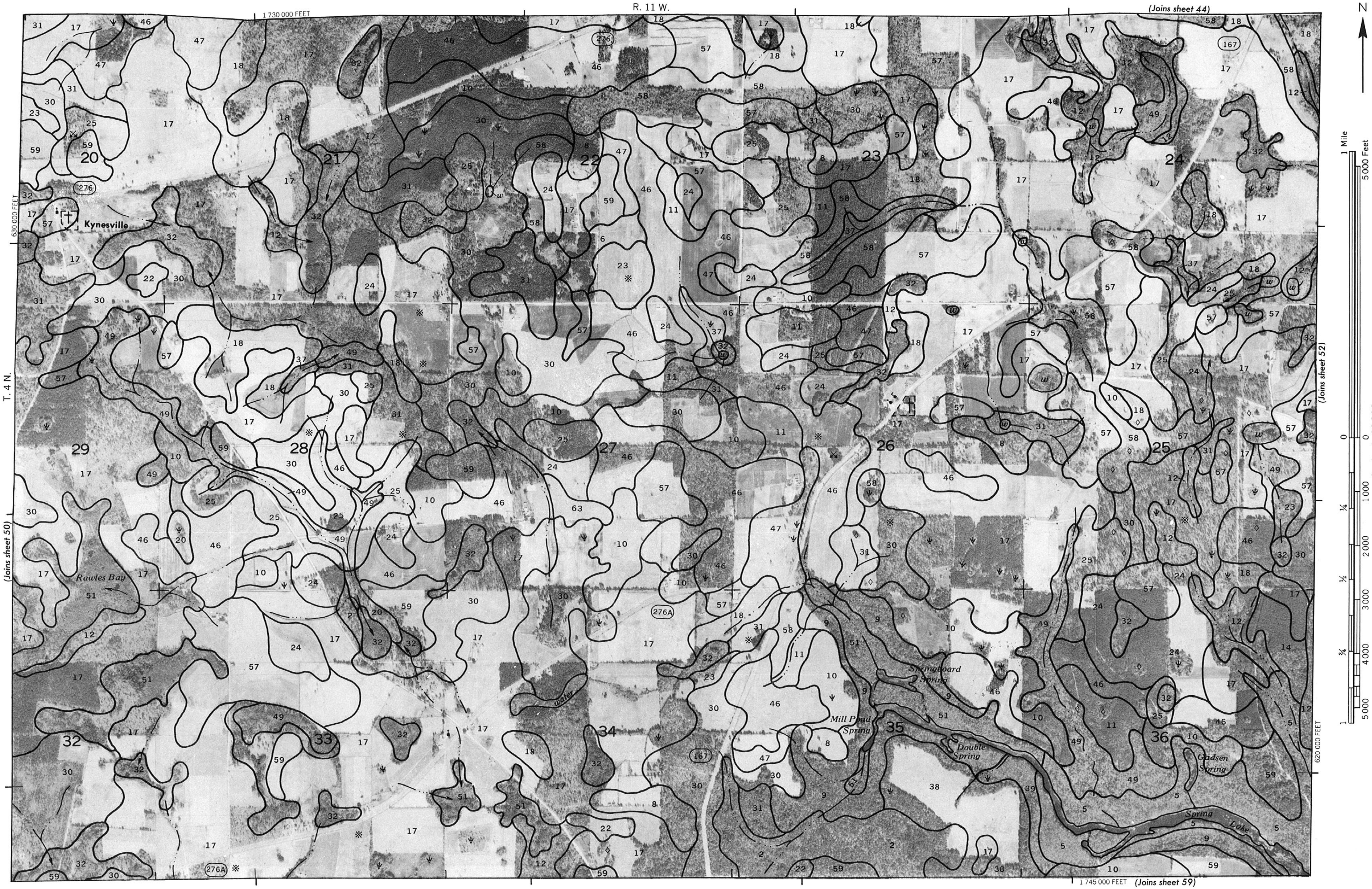
1 Mile

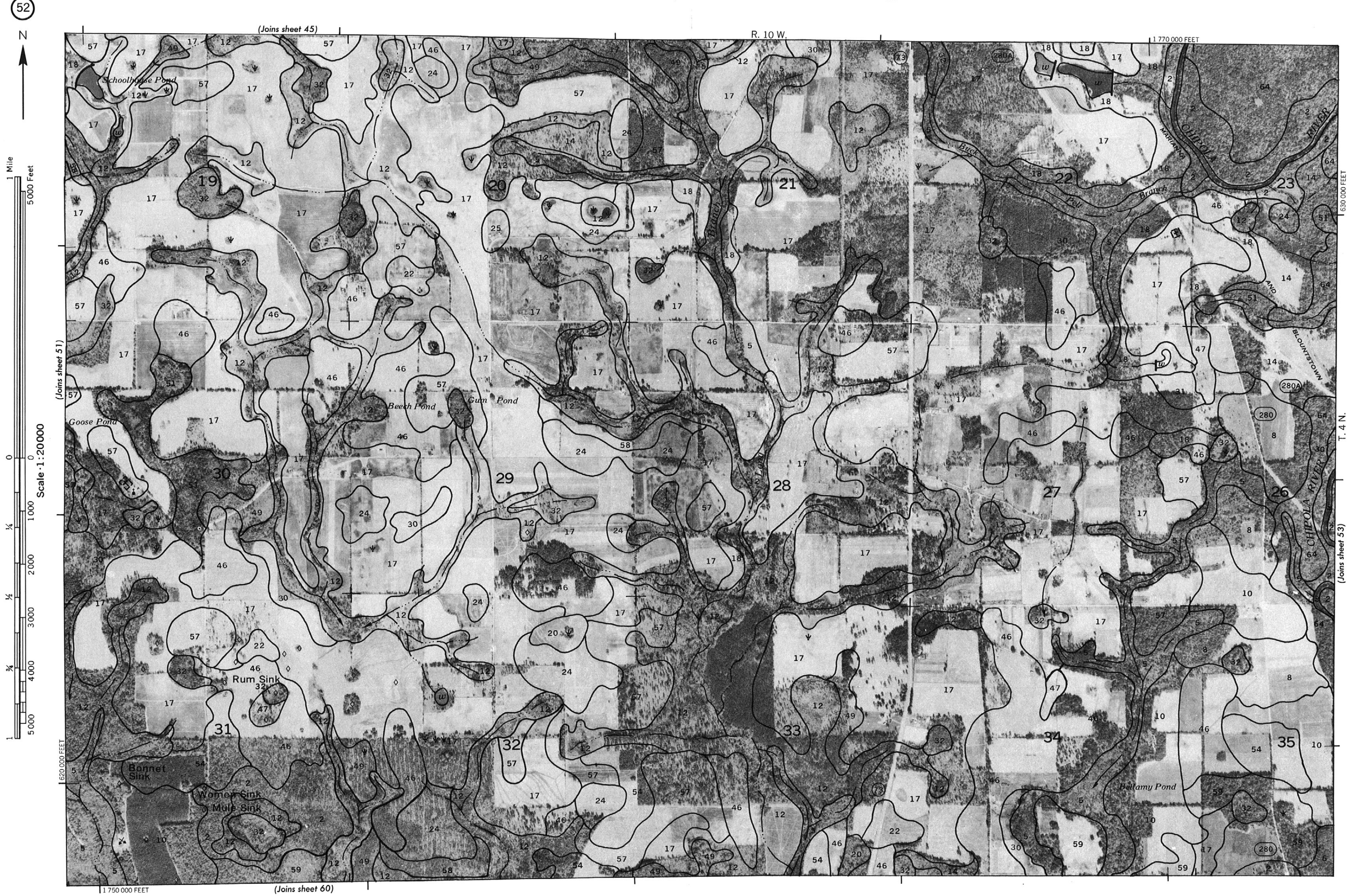
5000 Feet

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 50

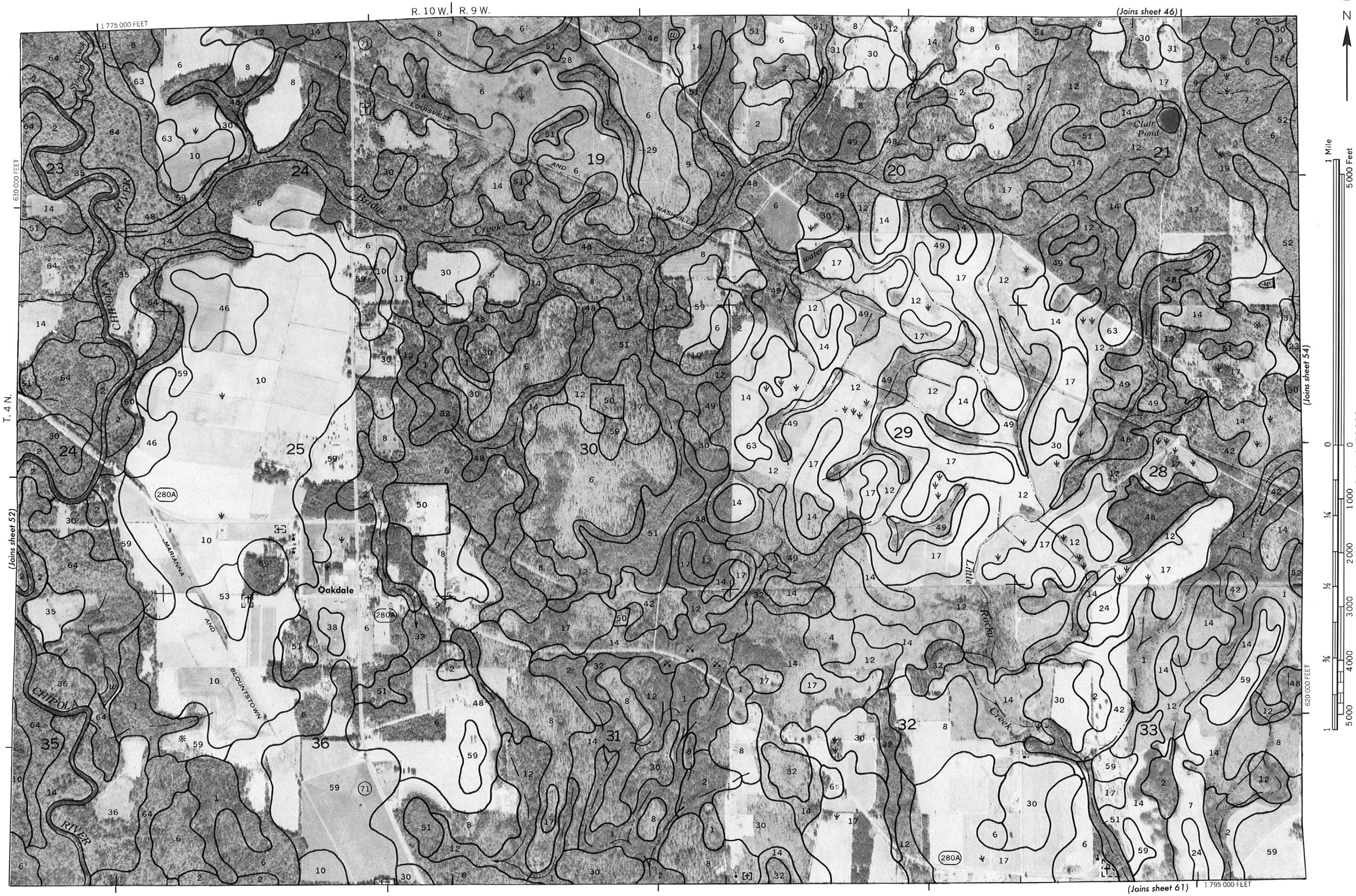
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.



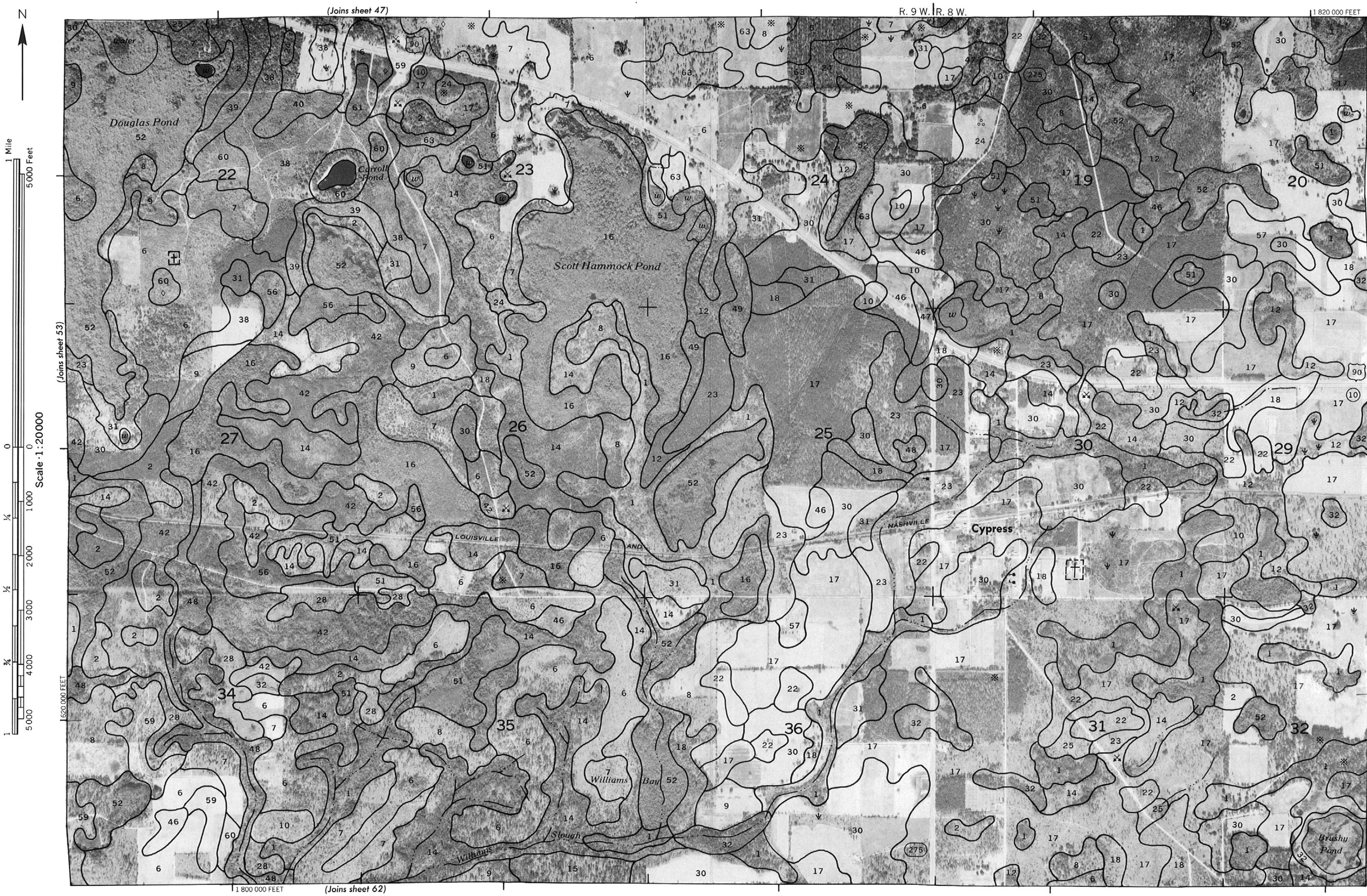


This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 52

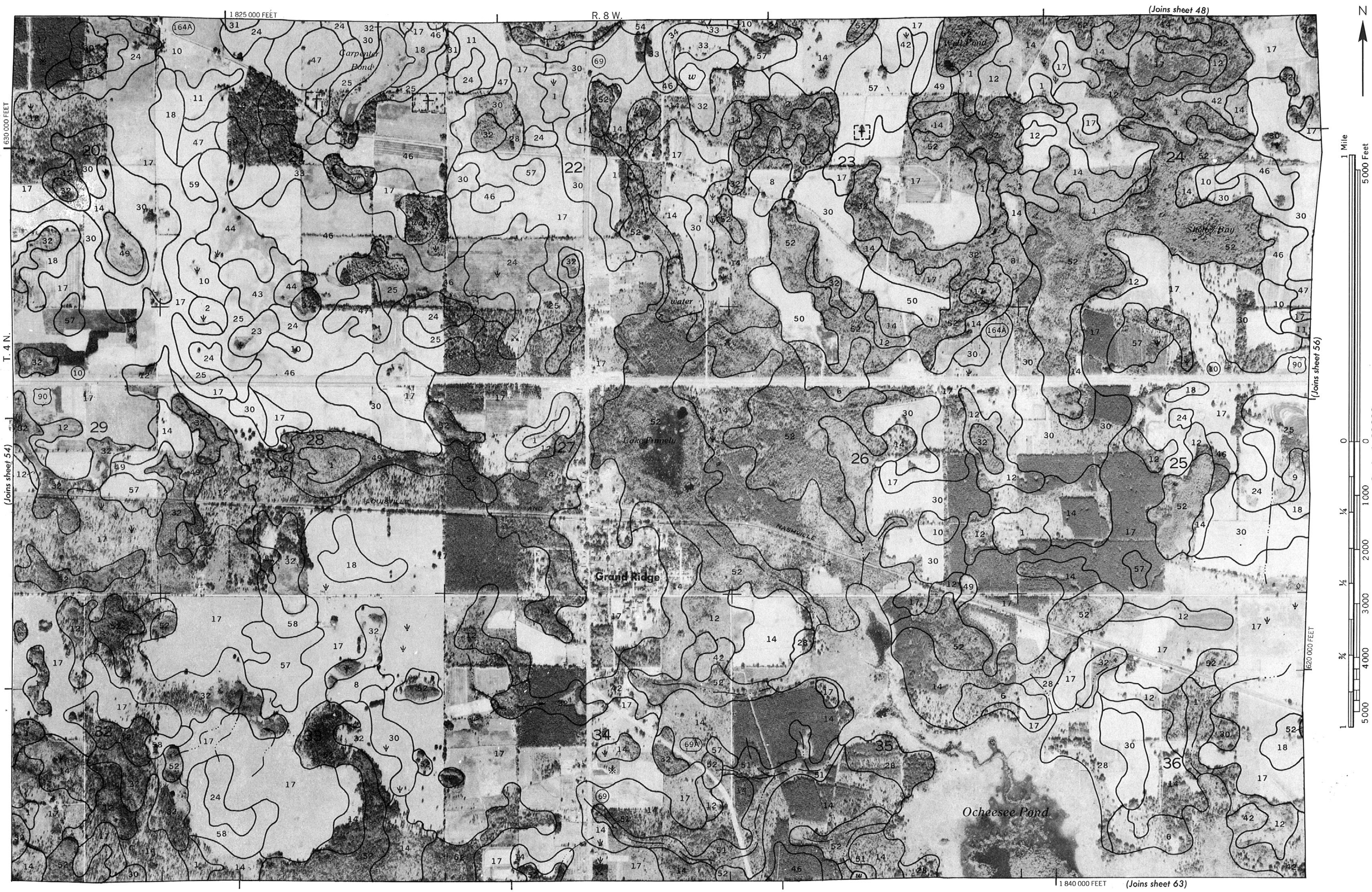


This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 54



This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

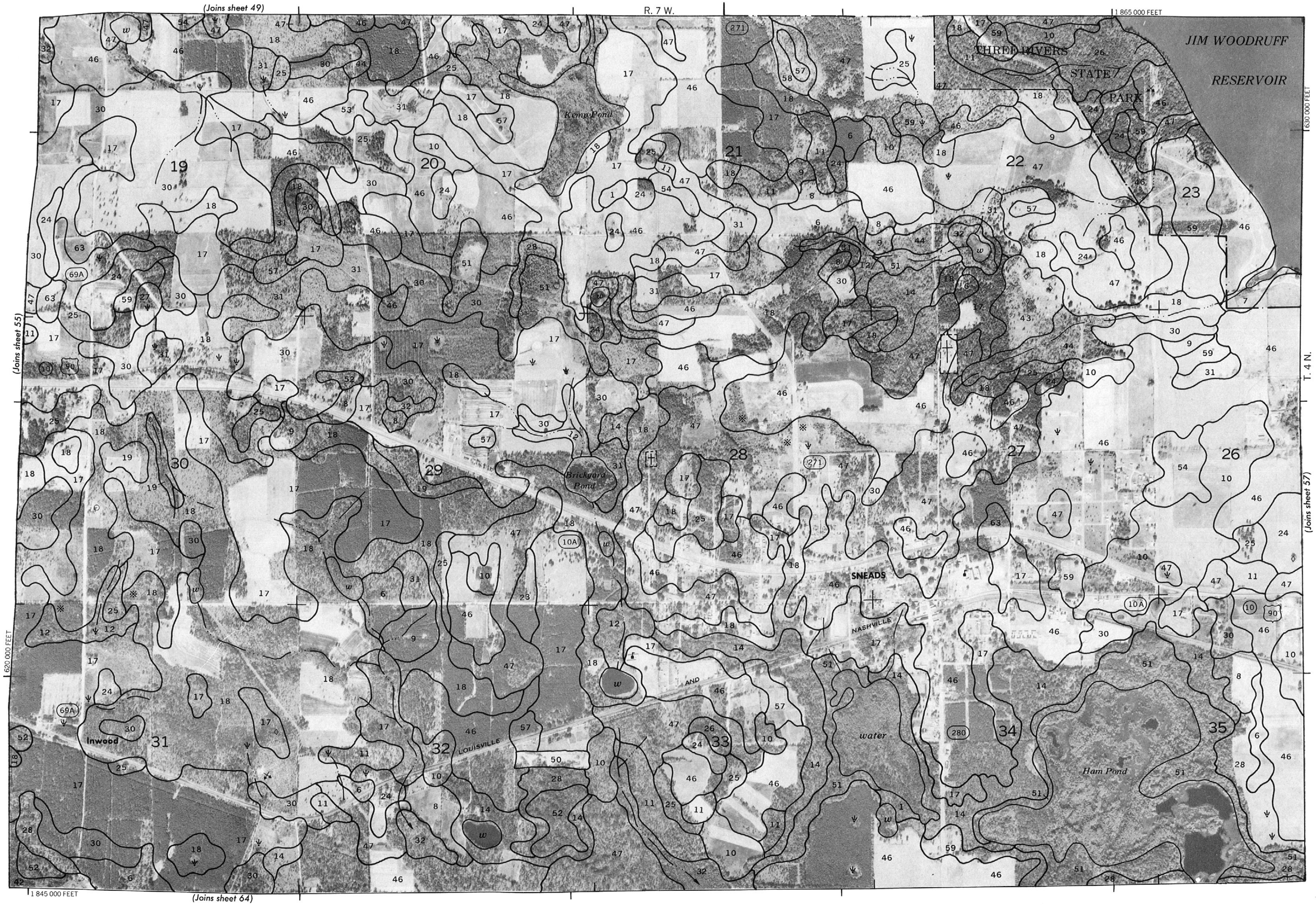
56

N

Scale 1:20000

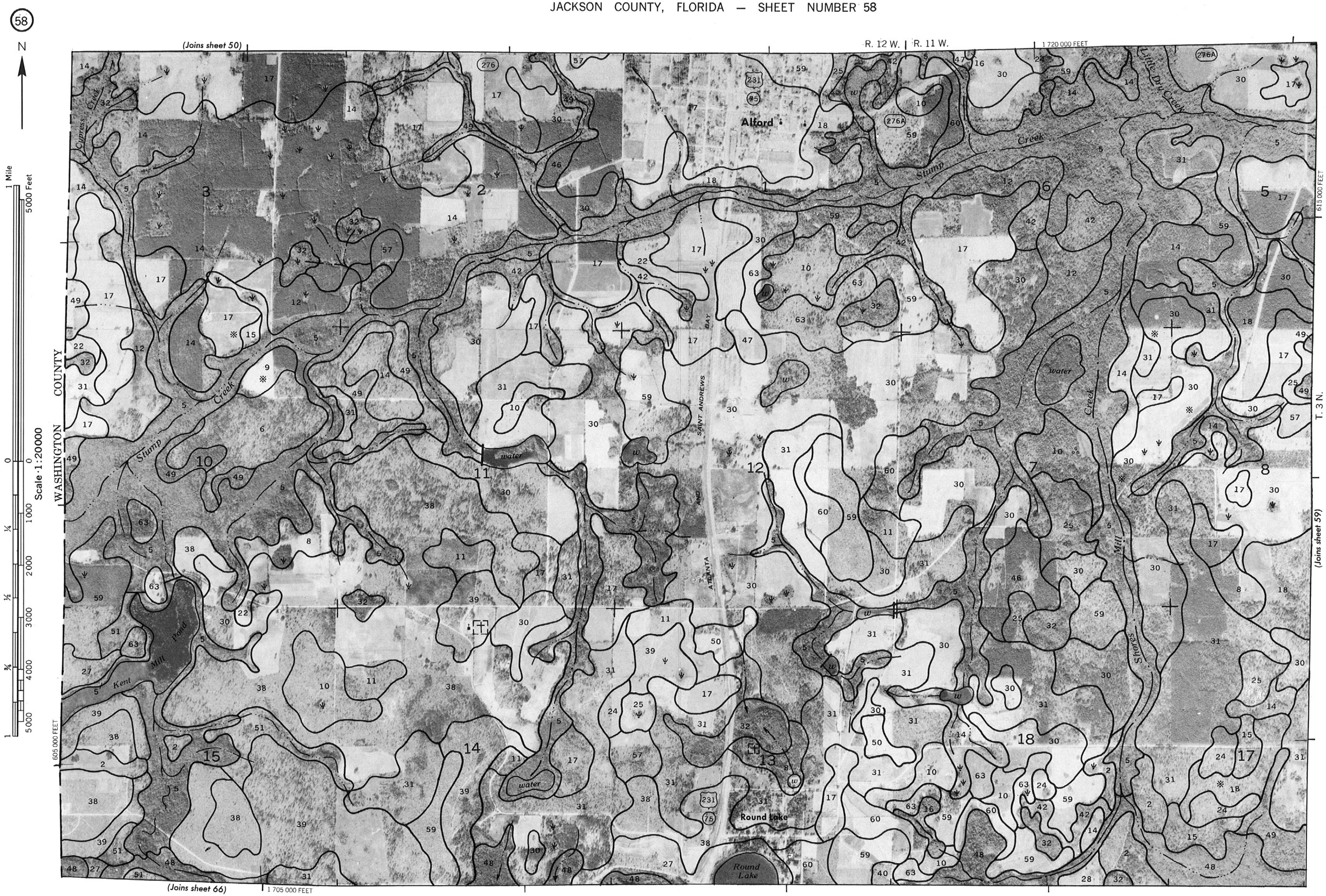
1 Mile

5000 Feet



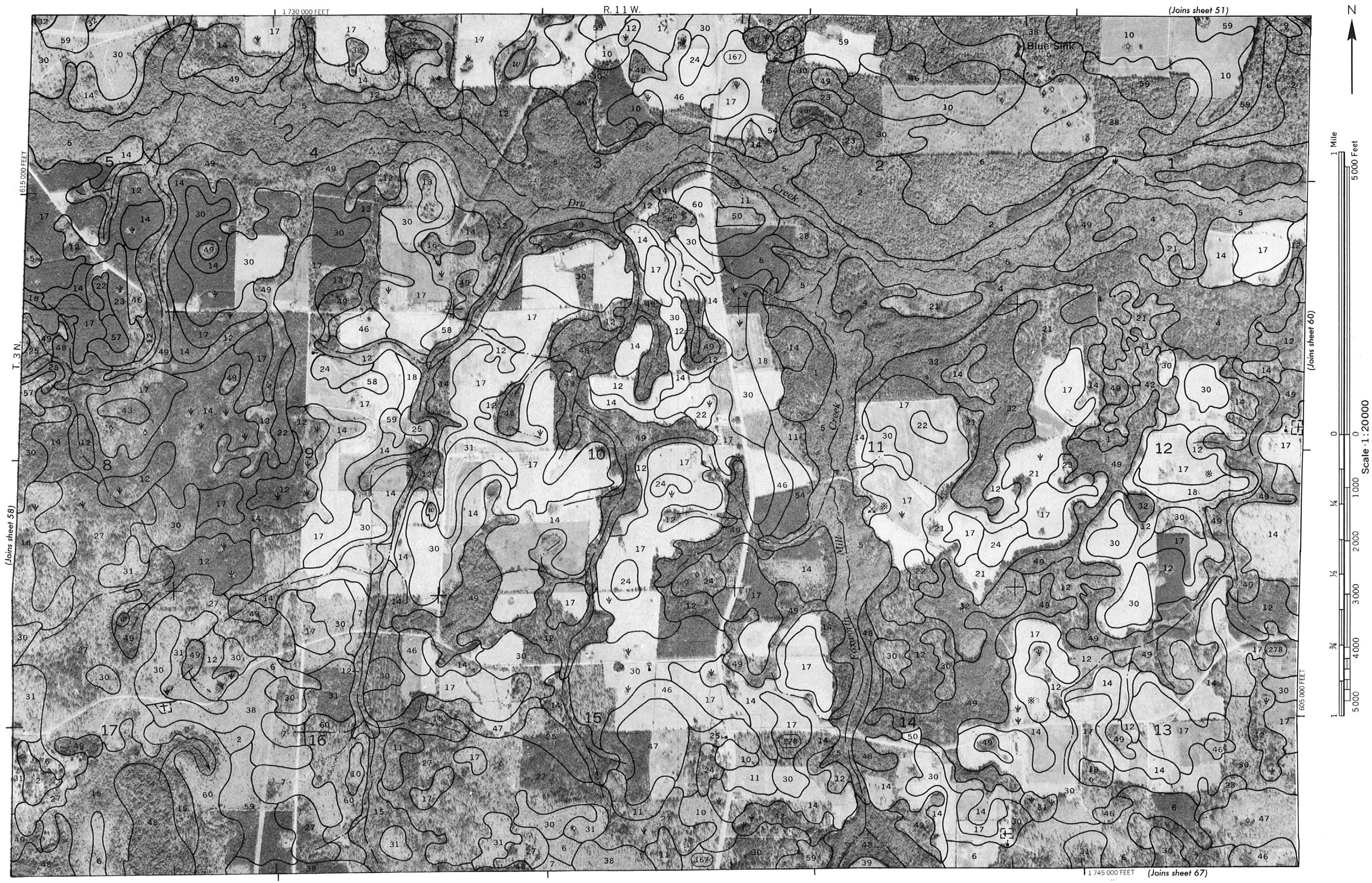
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

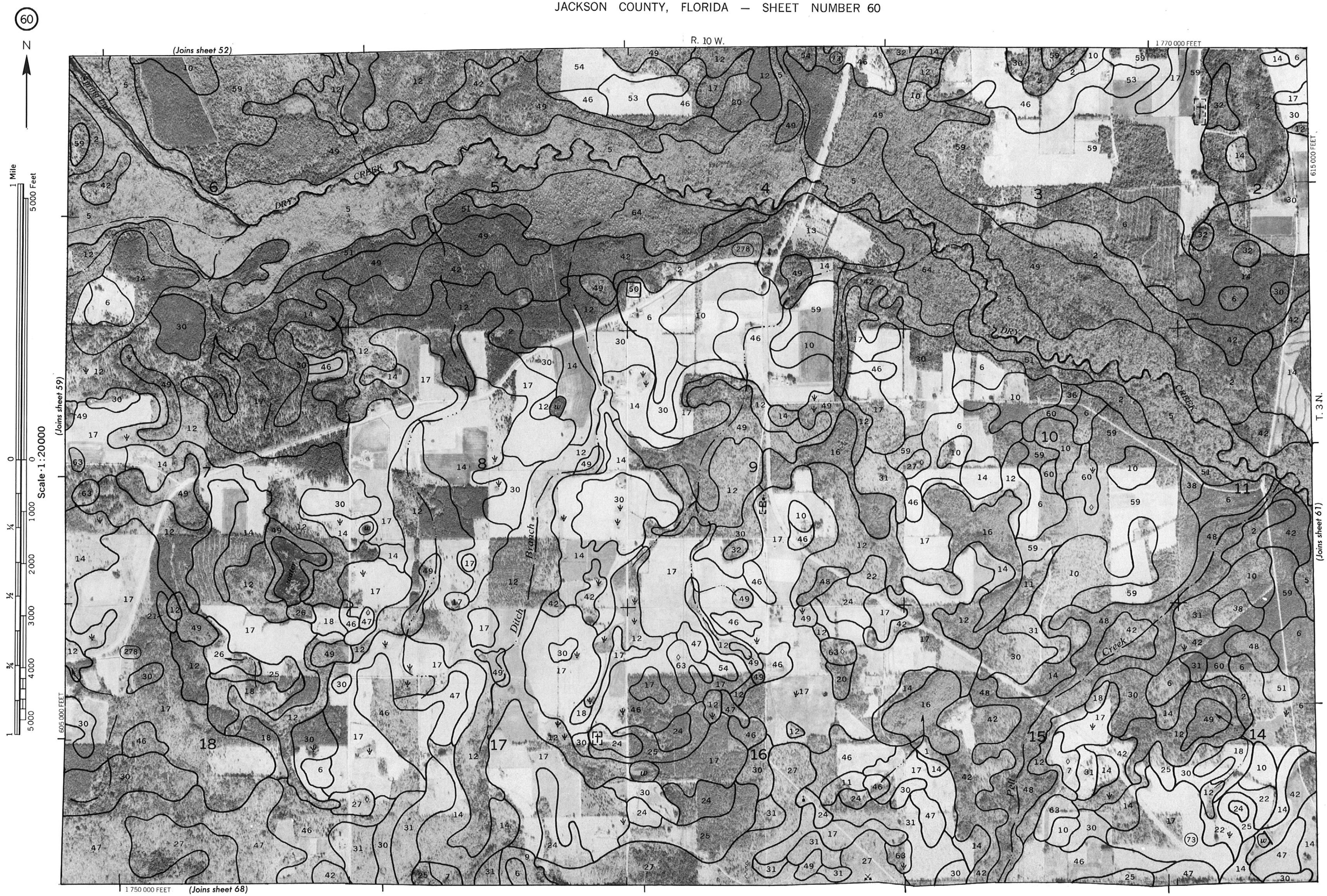


This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 58

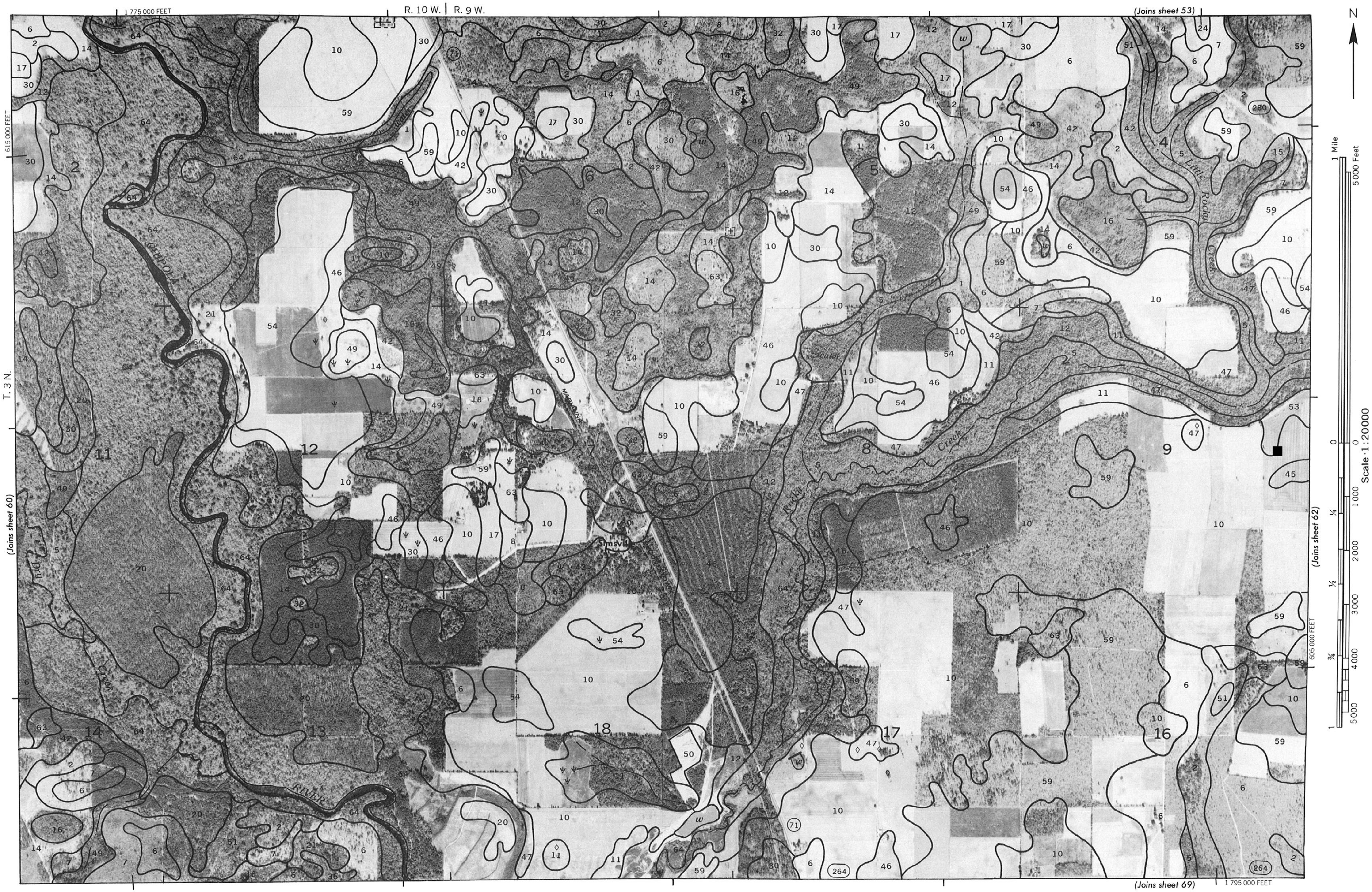


This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 60



JACKSON COUNTY, FLORIDA NO. 61

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

62

N

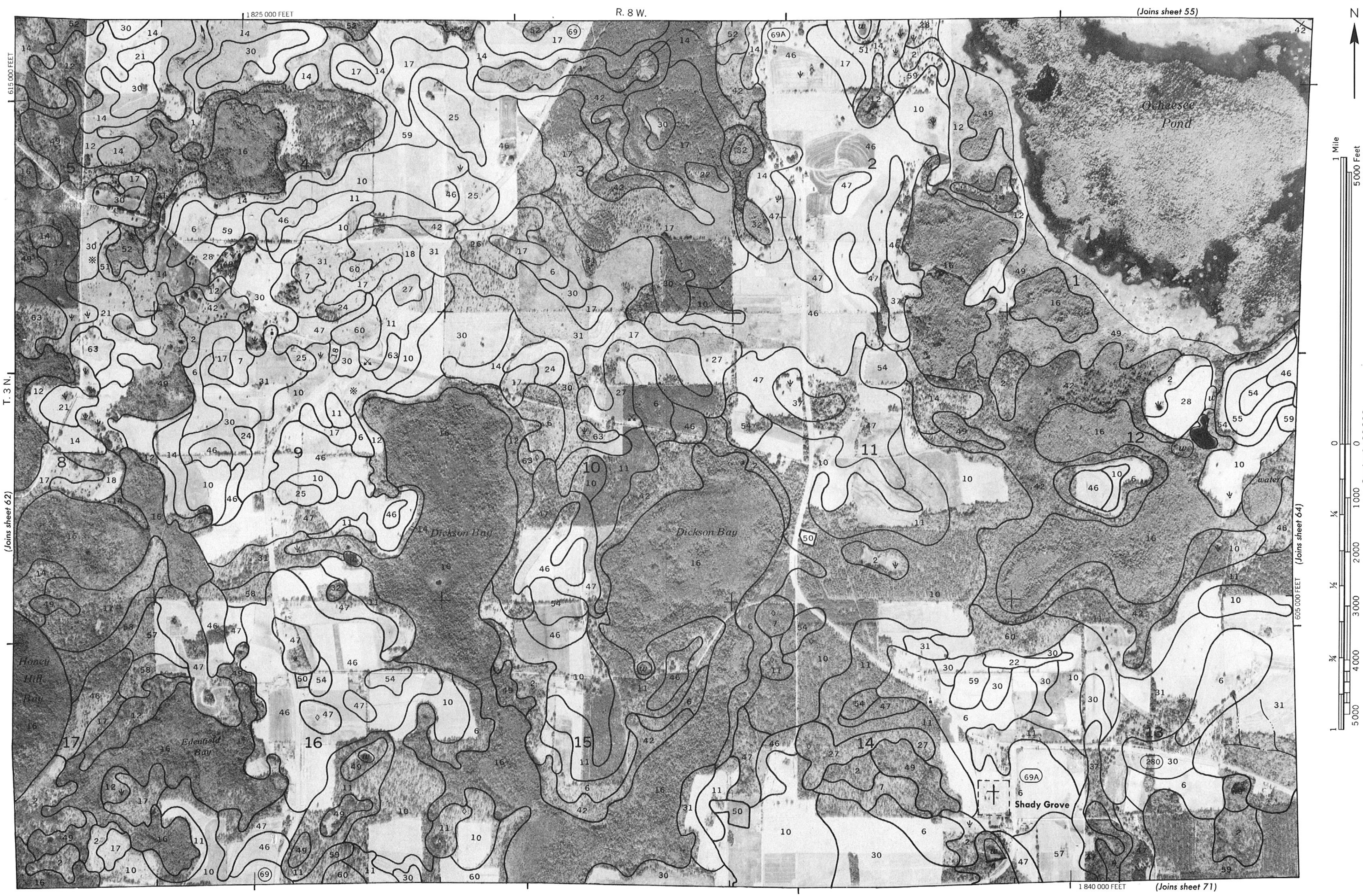
Scale 1:20000

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 62

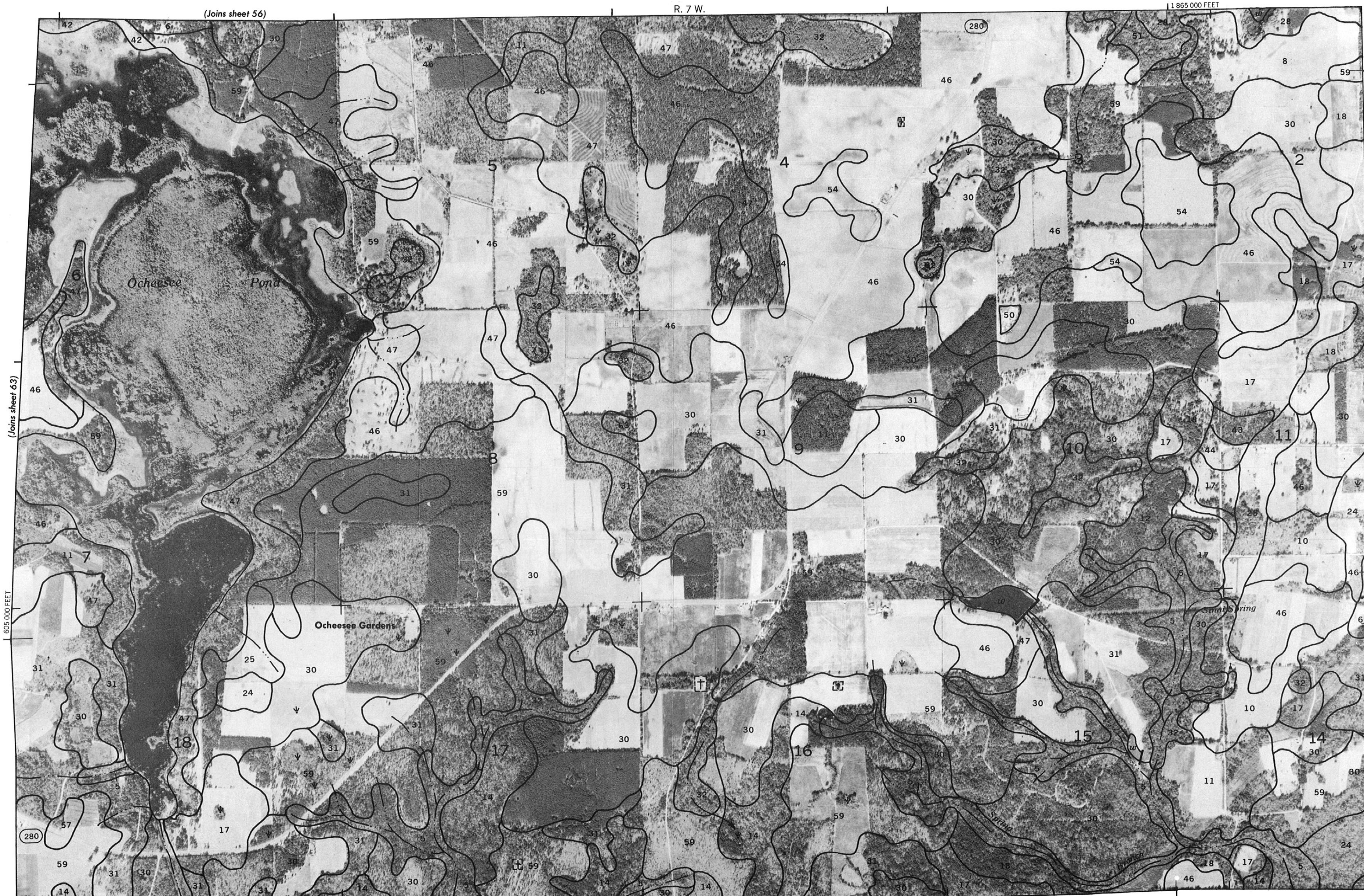
JACKSON COUNTY, FLORIDA NO. 63

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



64

N



1 Mile

5 000 Feet

Scale 1:20000

0 ¼ ½ ¾ 1

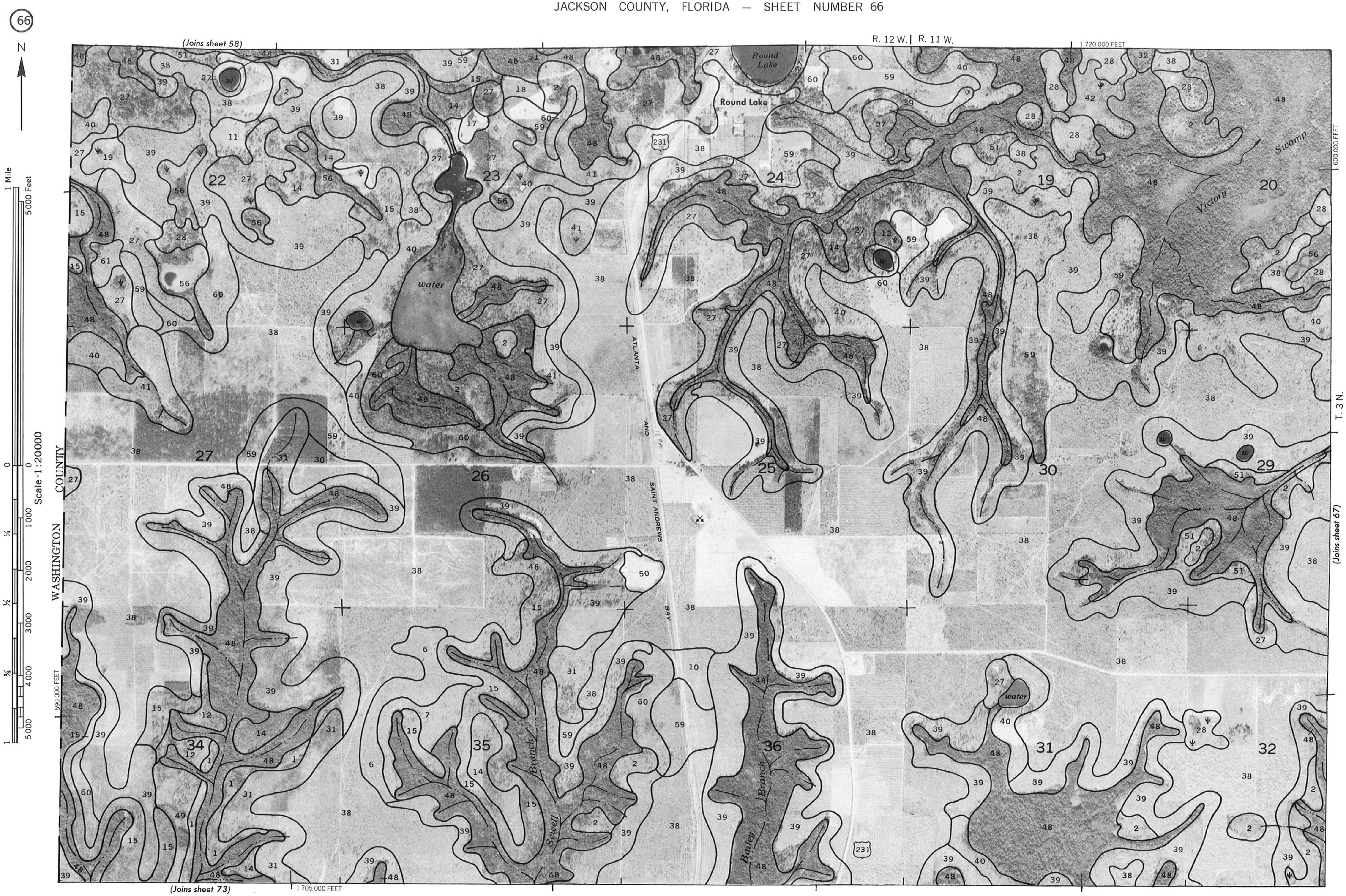
0 1000 2000 3000 4000 5000

This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 64

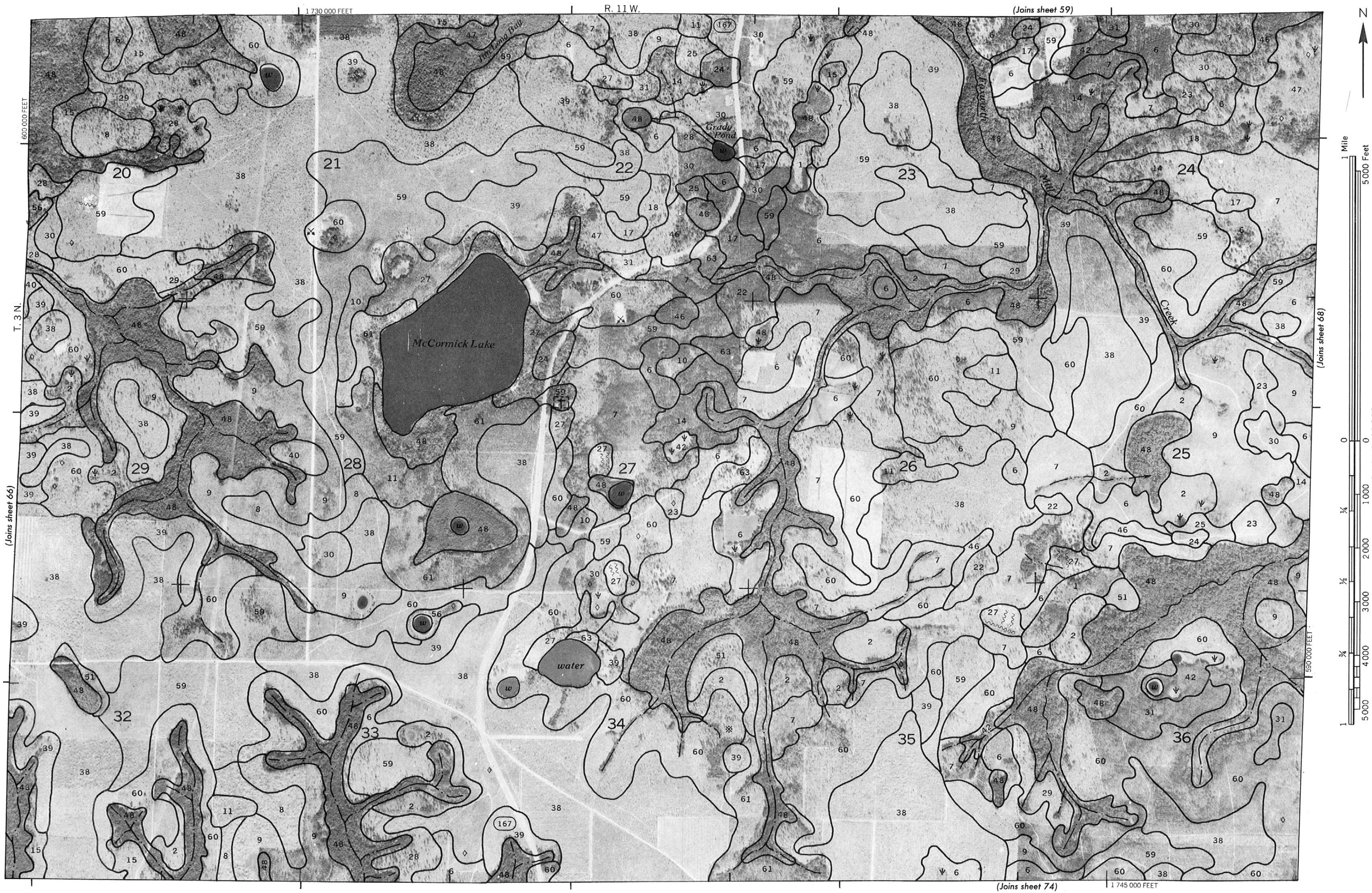
JACKSON COUNTY, FLORIDA NO. 65

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



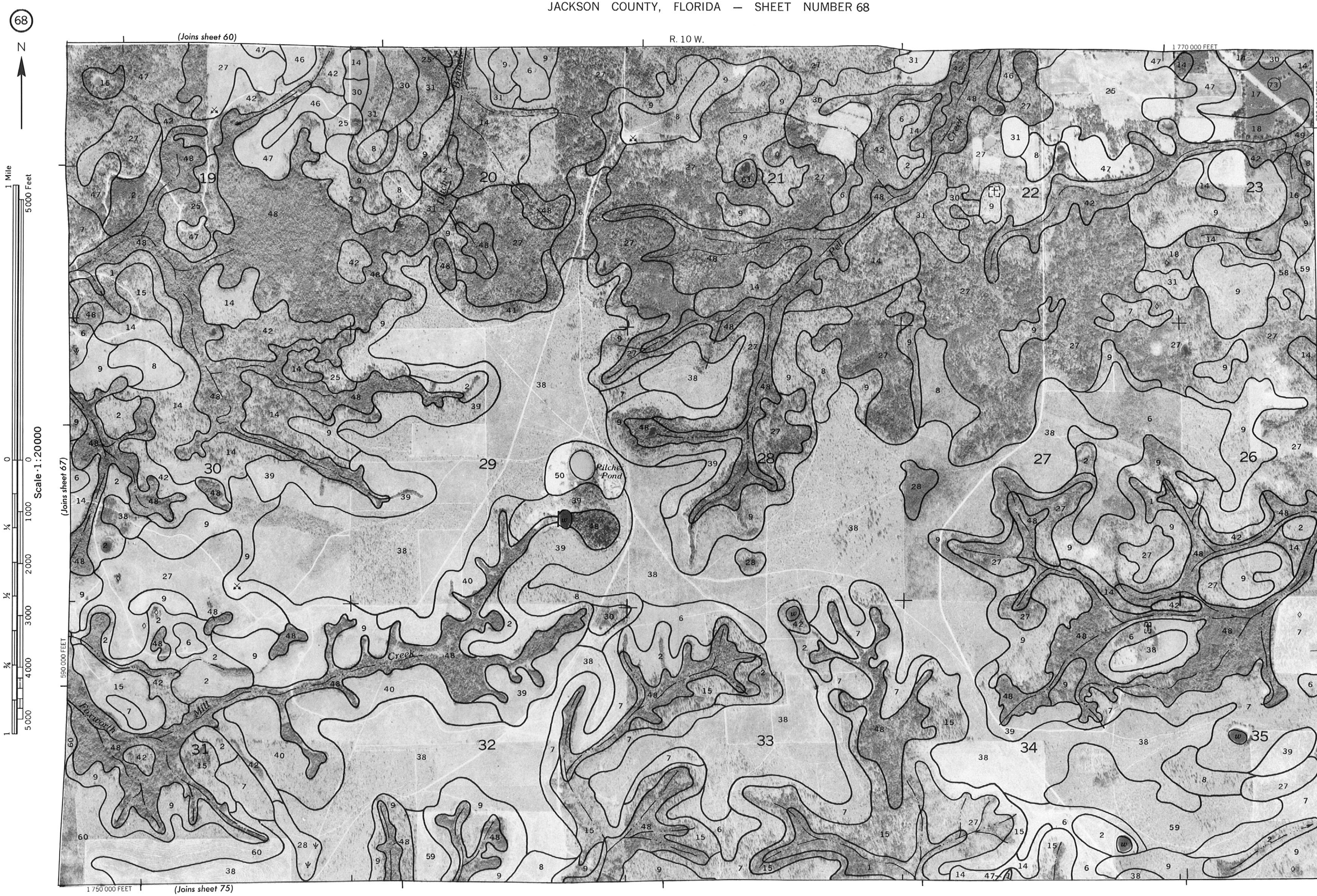
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 66



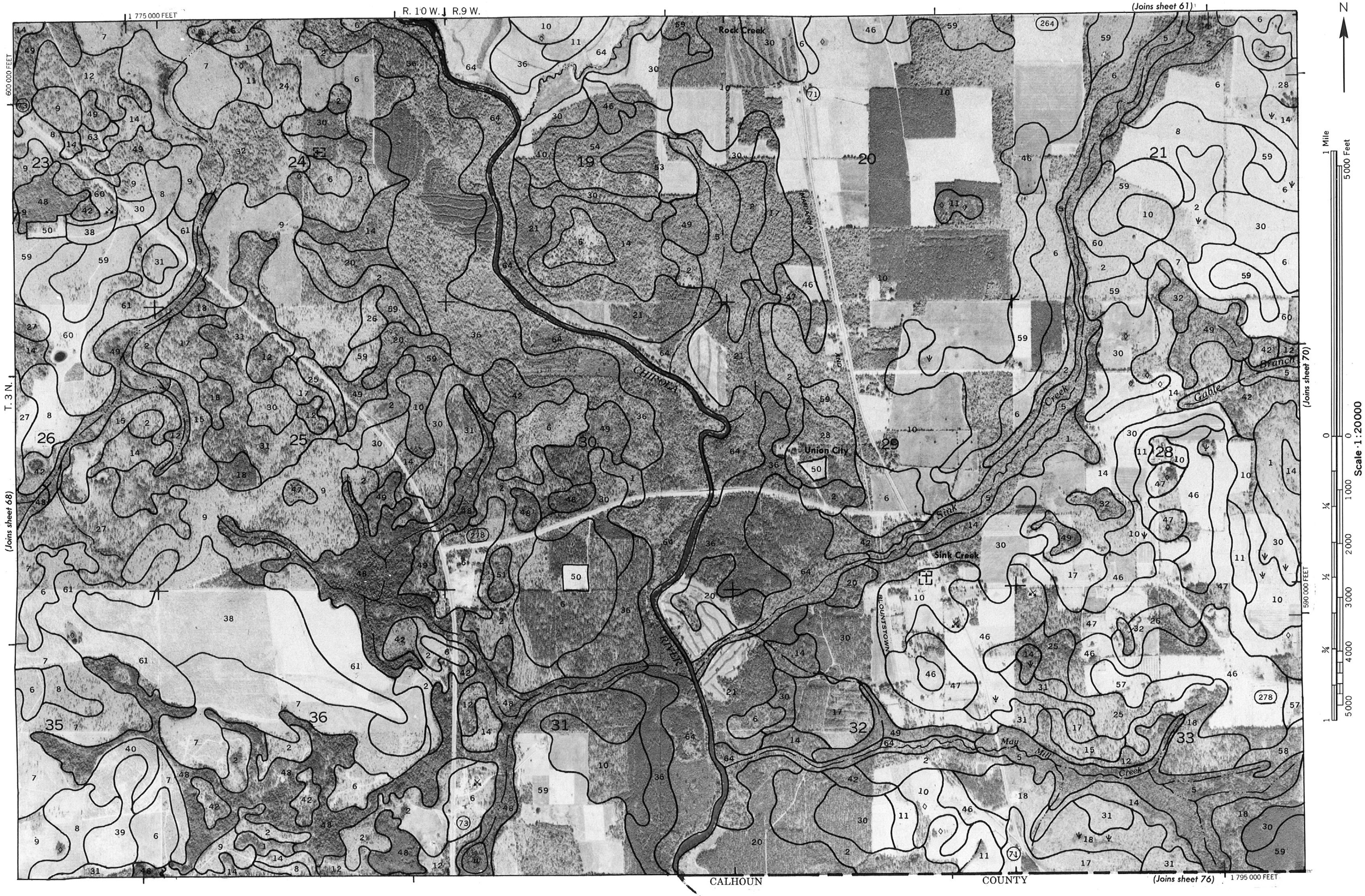
JACKSON COUNTY, FLORIDA NO. 67

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

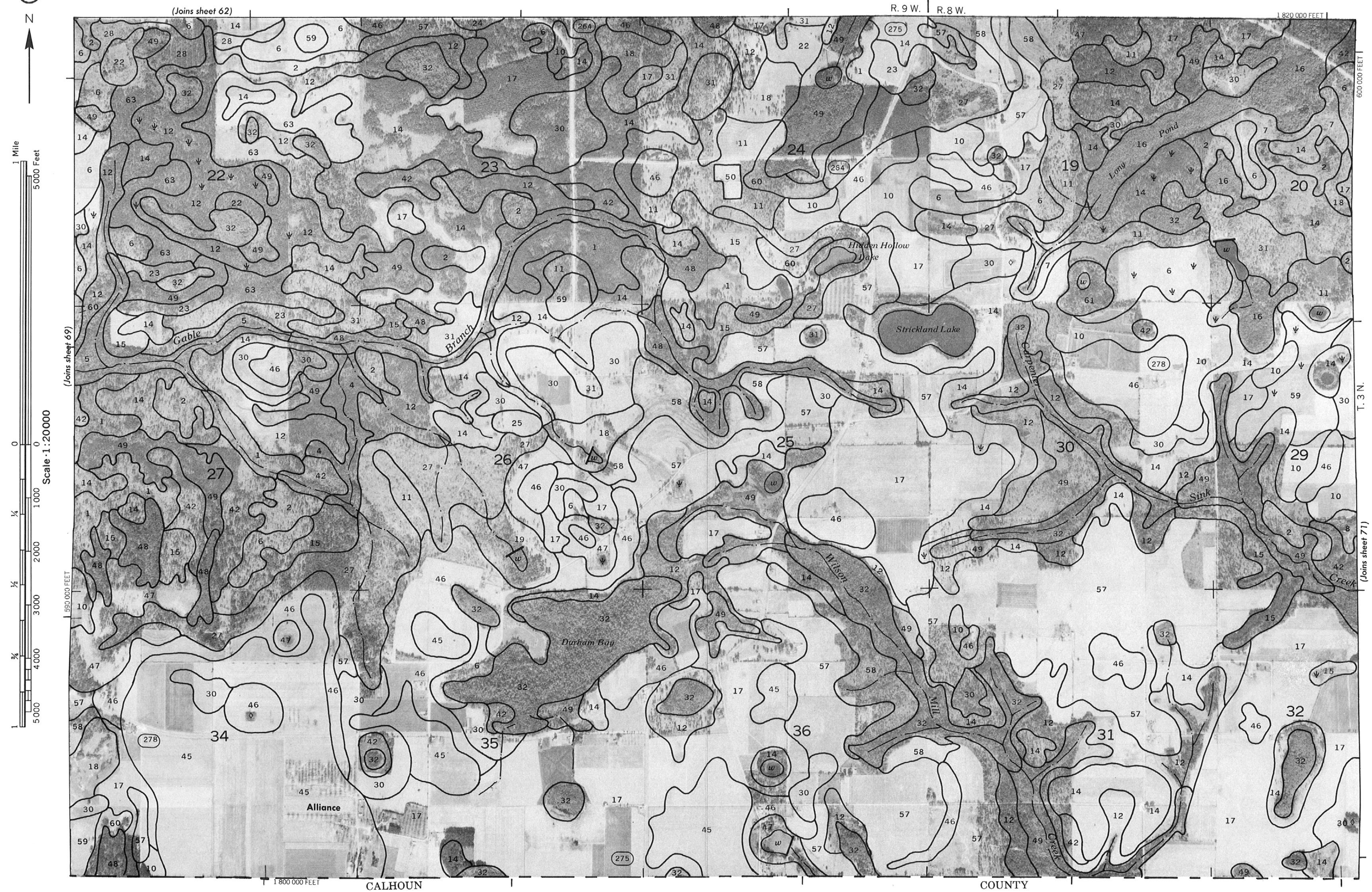
69



JACKSON COUNTY, FLORIDA NO. 69

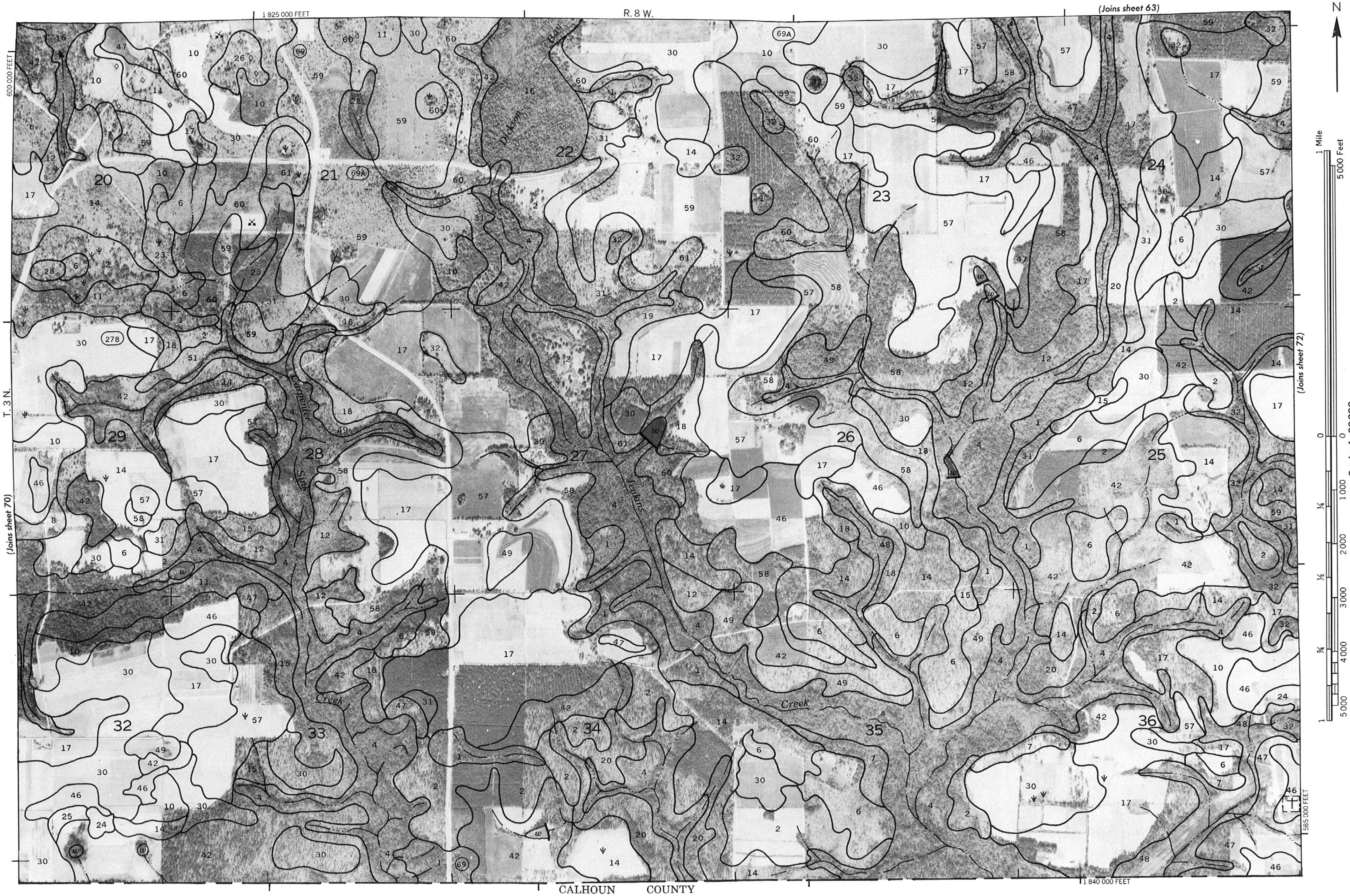
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

70



This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 70



JACKSON COUNTY, FLORIDA NO. 71

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies.
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

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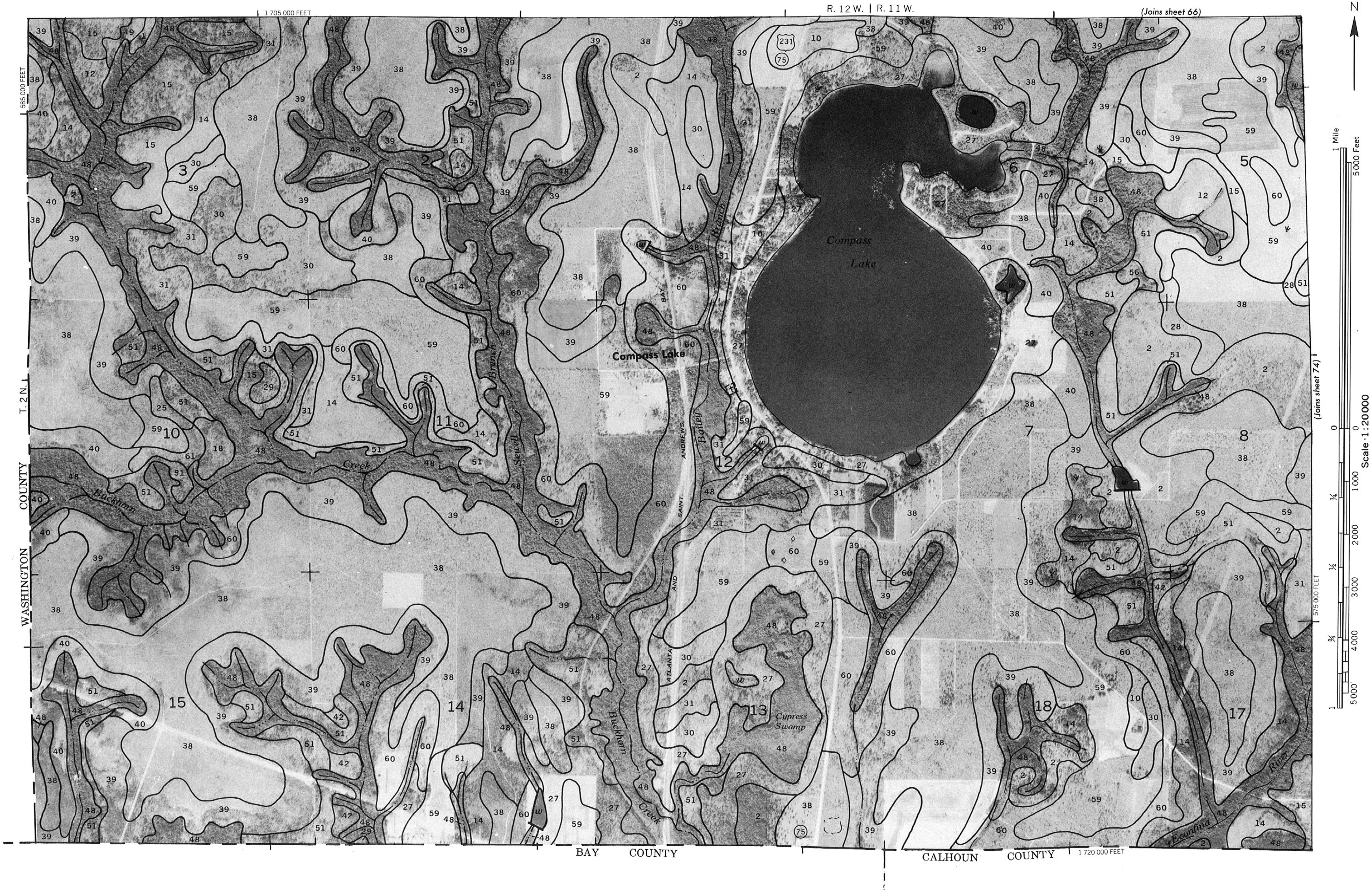
Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 72

JACKSON COUNTY, FLORIDA NO. 73

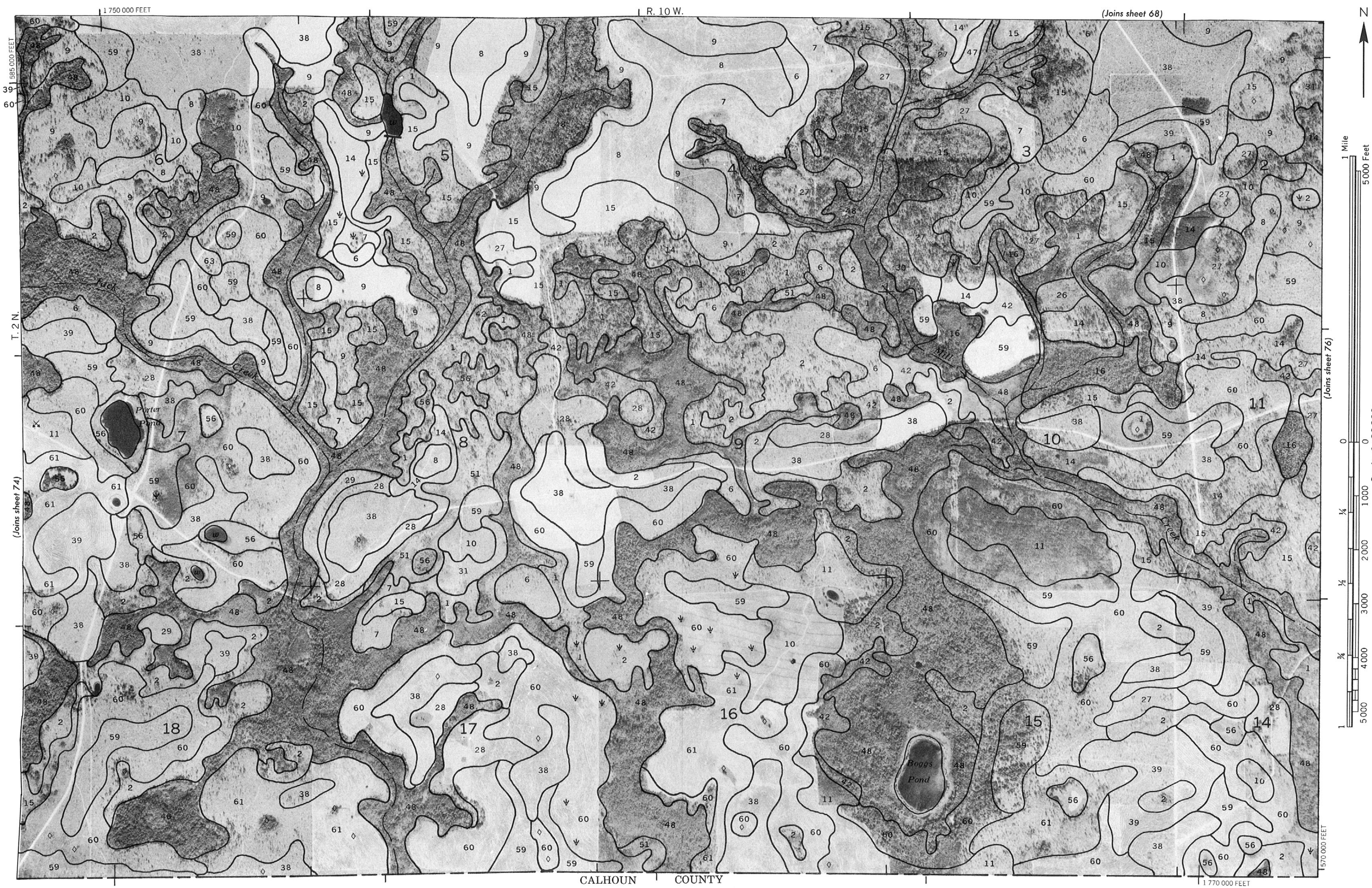
This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.



JACKSON COUNTY, FLORIDA — SHEET NUMBER 74

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 74



JACKSON COUNTY, FLORIDA NO. 75

This map is compiled on 1969 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA — SHEET NUMBER 76

This map is compiled on 1959 aerial photography by the U. S. Department of Agriculture, Soil Conservation Service and cooperating agencies. Coordinate grid ticks and land division corners, if shown, are approximately positioned.

JACKSON COUNTY, FLORIDA NO. 76